

UNIVERSITY BULLETIN.

SERIES 4. No. 25.

Ohio State University

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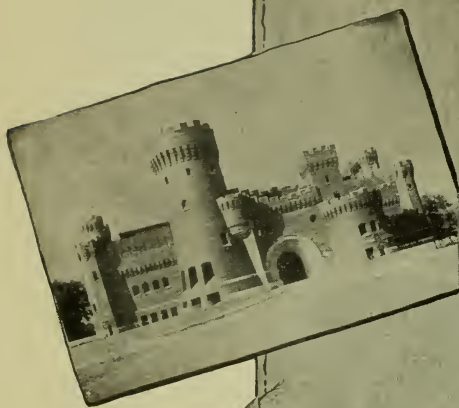
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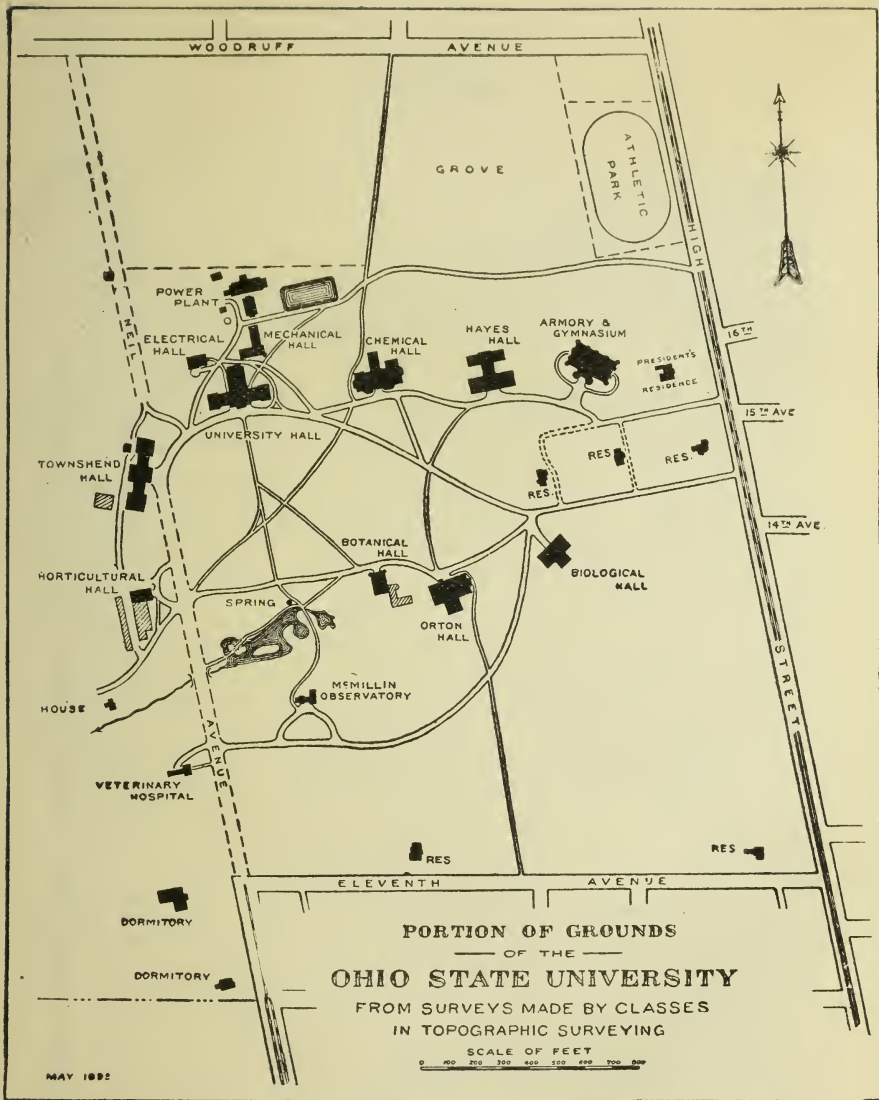
...COLLEGE OF...

ARTS,

PHILOSOPHY

—AND—

SCIENCE.



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DAYS AND DATES

1900

Summer Session of Lake Laboratory at Sandusky, July 2 to August 24.
 Entrance Examinations.....8 A. M. Monday, September 17
 Registration.....8 A. M. Tuesday, September 18
 Lectures and Class-work begin8 A. M. Wednesday, September 19
 President's Annual Address.....Friday, September 21
 Recess, Thanksgiving Day and Friday following.
 Latest date for announcing subjects }
 of Theses} Saturday, December 15
 Winter Recess begins.....4 P. M. Wednesday, December 19

1901

Winter Recess ends.....8 A. M. Wednesday, January 2
 Examinations.....Wednesday to Friday, Febr'y 6-8
 First Semester ends.....4 P. M. Friday, February 8
 Second Semester begins: Registration.8 A. M. Monday, February 11
 Lectures and Class-work begin.....8 A. M. Tuesday, February 12
 University DayFriday, February 22
 Spring Recess.....
 { 4 P. M. Friday, April 5
 to
 { 8 A. M. Wednesday, April 8
 High School Day.....Friday, May 17
 Senior Vacation begins.....Saturday, May 25
 Field Day.....To be announced
 Competitive Drill.....Saturday, May 25
 Memorial DayThursday, May 30
 Latest date for presenting Thesis.....Saturday, June 8
 Final ExaminationsWednesday to Friday, June 12-14
 Latest date for filing bound copy of }
 Thesis} Friday, June 14
 Baccalaureate SermonSunday, June 16
 Entrance Examinations.....
 { 8 A. M. Monday, June 17
 { 8 A. M. Tuesday, June 18
 Class Day.....Monday, June 17
 Alumni Day.....Tuesday, June 18
 Commencement.....Wednesday, June 19
 Summer Vacation.
 Session of Lake Laboratory.July 1 to August 23
 Entrance Examinations.....
 { 8 A. M. Monday, September 16
 { 8 A. M. Tuesday, September 17
 Registration.....8 A. M. Tuesday, September 17
 Lectures and Class-work begin.....8 A. M. Wednesday, September 18

For information concerning text-books, etc., address,

HONLINE & WEST,
Ohio State University, Columbus.

OHIO STATE UNIVERSITY.

HISTORY.

The land grant made by the United States under an act approved by President Lincoln, July 2, 1862, provided that there should be granted to each State an amount of public land equal to thirty thousand acres for each Senator and Representative to which the State was entitled by the apportionment of the census of 1860. The proceeds under this act were to constitute a perpetual fund, the capital of which was to remain forever undiminished and the interest of the same was to be inviolably applied by each state that should take and claim the benefits of the act to the endowment, support and maintenance of at least one "college where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such a manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Governor Tod, in November, 1862, brought the subject before the State Board of Agriculture, and later to the attention of the legislature. In January, 1864, Hon. Columbus Delano introduced a bill accepting the grant. This became a law February 9, 1864, and pledged the faith of the state to the performance of all the conditions and provisions contained therein. In 1866 an act introduced by Hon. J. T. Brooks, was passed which provided for the establishment of the Ohio Agricultural and Mechanical College but the provisions were not carried into effect and a second act introduced by Hon. R. P. Cannon was passed in 1870, entitled "An act to establish and maintain an Agricultural and Mechanical College in Ohio." Under the provisions of this act the institution was located in Columbus and the board proceeded to the organization of the college and the election of a faculty of instruction and the institution was opened for the reception of students on the seventeenth day of September, 1873.

In 1878 the legislature passed "An act to reorganize and change the name of the Ohio Agriculture and Mechanical College and to repeal certain acts therein mentioned." The act provided that the

institution should be thereafter designated as "The Ohio State University." Up to this time but one appropriation had been made by the state for the support of the institution. With the reorganization came the larger and broader view of the state's relation to public education and since that time the Ohio State University has enjoyed with other public educational institutions a more generous support by the state.

The governing body of the institution is a board of seven trustees, appointed by the governor of the state and confirmed by the senate, for terms of seven years as provided in the law organizing the University. The original endowment has been supplemented and the objects of the University promoted by a permanent annual grant from the United States, under an act of 1890, by special appropriations of the General Assembly; and in 1891, by a permanent annual grant from the state, which grant was doubled by the legislature of 1896. In accordance with the spirit of the law under which it is organized, the University aims to furnish ample facilities for education in the liberal and industrial arts, the sciences and the languages, and for thorough technical and professional study of agriculture, engineering in its various departments, veterinary medicine, pharmacy and law. Through the aid which has been received from the United States and from the state it is enabled to offer its privileges, with a slight charge for incidental expenses, to all persons of either sex who are qualified for admission.

Location of the University.

The University is situated within the corporate limits of the city of Columbus, two miles north of the Union Depot and about three miles from the state Capitol. The University grounds consist of three hundred and forty-five acres, bounded east and west by High street and the Olentangy river, respectively. The western portion, about 235 acres, is devoted to agricultural and horticultural purposes, and is under the management of the College of Agriculture and Domestic Science. The Eastern portion is occupied by the principal University buildings, campus, athletic and drill grounds, a park-like meadow, and a few acres of primitive forest.

The grounds are laid out with care, ornamented with trees, shrubs and flower beds; and are so managed as to illustrate the instruction in botany, horticulture, forestry, landscape gardening and floriculture.

The University may be reached by either the North High street or Neil avenue electric cars. Those wishing to go to the principal buildings of the University, to the residences on the grounds, or the

athletic field, should take a High street car going north. Those wishing to visit the Emerson McMillin Observatory, the Veterinary Hospital, Townshend Hall, Horticultural Hall and the dormitories, will find the Neil avenue cars more convenient.

The University has thirteen buildings devoted to instruction, one boiler house, one power house, two dormitories, six residences and some farm buildings. These buildings represent an investment for construction of about eight hundred thousand dollars. The equipment and apparatus amount to about one hundred and seventy thousand dollars. The land now occupied as a site, with the farm, is valued at one million five hundred thousand dollars.

Expenses.

The incidental fee of fifteen dollars a year is charged to all students (except those holding scholarships), and is payable one-half at the opening of the year and the other half at the opening of the second semester. The laboratory fees are charged to such students (except those holding scholarships), as pursue courses in sciences having fees attached. These are detailed elsewhere.

The cost of living, which is the chief item of expense, is as reasonable in Columbus as in most college towns. Furnished rooms may be secured at prices ranging from one dollar a week upward and the cost of table board from two dollars and twenty-five cents upward. The uniform required of all members of the battalion costs about fourteen dollars. In the matter of expense much is dependent upon the personal taste and habits of the student. There is nothing about the State University requiring a large expenditure of money; economy and careful living are the rule. The University distinctly encourages these things and will use every means to discourage a lavish expenditure of money as inconsistent with the best interests of the student or of college life. Two hundred and fifty dollars may be regarded as sufficient money to provide for reasonable expenses for a year at the University.

THE UNIVERSITY.

The Ohio State University is divided into six Colleges, as follows :

The College of Agriculture and Domestic Science.

The College of Arts, Philosophy and Science.

The College of Engineering.

The College of Law.

The College of Pharmacy.

The College of Veterinary Medicine.

The College of Agriculture and Domestic Science consists of those departments represented in the courses leading to the degrees of Bachelor of Science in Agriculture, Bachelor of Science in Horticulture and Forestry and Bachelor of Science in Domestic Science; in the Short Course in Agriculture, in the Short Course in Domestic Science, and in the Course in Dairying.

The College of Arts, Philosophy and Science consists of those departments represented in the courses leading to the degrees of Bachelor of Arts, Bachelor of Philosophy, and Bachelor of Science; and in the Course Preparatory to Law and to Journalism.

The College of Engineering consists of those departments represented in the courses leading to the degrees of Civil Engineer, Engineer of Mines, Engineer of Mines in Ceramics, Mechanical Engineer, Mechanical Engineer in Electrical Engineering, Bachelor of Science in Industrial Arts, and Bachelor of Science in Chemistry or in Metallurgy; in the Course in Architecture, in the Short Course in Clay-working and Ceramics and in the Short Course in Mining.

The College of Law consists of those departments represented in the course leading to the degree of Bachelor of Laws.

The College of Pharmacy consists of those departments represented in the courses leading to the degree of Bachelor of Science in Pharmacy, and in the Short Course in Pharmacy.

The College of Veterinary Medicine consists of those departments represented in the course leading to the degree of Doctor of Veterinary Medicine, and to a certificate of Veterinary Surgeon.

Each College is under the direction of its own Faculty, which has power to act in all matters pertaining to the work of students in that College.

COLLEGE OF ARTS, PHILOSOPHY AND SCIENCE

FACULTY AND INSTRUCTORS.

- REV. WILLIAM OXLEY THOMPSON, D. D. University Grounds
President of the University.
- ALLEN CAMPBELL BARROWS, D. D. 85 W. Tenth Ave.
Dean, and Professor of English Literature.
- * EDWARD ORTON, LL. D.
Professor of Geology.
- WILLIAM HENRY SCOTT, LL. D. 131 Fifteenth Ave.
Professor of Philosophy.
- SIDNEY AUGUSTUS NORTON, LL. D. 363 East Town St.
Emeritus Professor of Chemistry.
- SAMUEL CARROLL DERBY, A. M. 93 Fifteenth Ave.
Professor of Latin.
- JOSIAH RENICK SMITH, A. M. 950 Madison Ave.
Professor of the Greek Language and Literature.
- BENJAMIN FRANKLIN THOMAS, Ph. D. University Grounds.
Professor of Physics, and State Sealer of Weights and Measures.
- GEORGE WELLS KNIGHT, Ph. D. University Grounds.
Professor of American History and Political Science.
- ROSSER DANIEL BOHANNAN, B.Sc., C.E., E.M. 16th & Indianola Ave.
Professor of Mathematics.
- ERNST AUGUST EGGERS. 190 W. Eleventh Ave., University Grounds.
Professor of Germanic Languages and Literatures.
- ALBERT MARTIN BLEILE, M. D. 218 King Ave.
Professor of Anatomy and Physiology.
- WILLIAM ASHBROOK KELLERMAN, Ph. D. 175 Eleventh Ave.
Professor of Botany.
- BENJAMIN LESTER BOWEN, Ph. D. 775 East Broad St.
Professor of Romance Languages and Literatures.
- JOSEPH VILLIERS DENNEY, A. B. 230 W. Tenth Ave.
Professor of Rhetoric and English Language.
- J. P. GORDY, LL. D. The Normandie.
Professor of Education.

* Died October 16, 1899.

- WILLIAM McPHERSON, D. Sc., Ph. D. 97 Hamilton Ave.
Professor of Chemistry.
- HERBERT OSBORN, M. Sc. 357 W. Seventh Ave.
Professor of Zoology and Entomology.
- HENRY CURWEN LORD, B. Sc. 401 W. Sixth Ave.
*Director of the Emerson McMillin Observatory, and Associate
Professor of Astronomy.*
- CHRISTOPHER P. LINHART, M. D. Gymnasium. The Vendome.
Director of the Gymnasium, and Instructor in Physical Education.
- JAMES MADISON BURNS, Major (retired) U. S. A., The Columbus Club
Professor of Military Science and Tactics.
- FREDERICK CONVERSE CLARK, Ph. D. Neil Ave.
*Associate Professor of Economics and Sociology, and Secretary of
the Faculty.*
- WILBUR HENRY SIEBERT, M. A. 1332 Highland St.
Associate Professor of European History.
- OLIVE B. JONES. 53 Eleventh Ave.
Librarian.
- STELLA ELLIOTT CANFIELD 1457 Worthington St.
Associate Director of the Gymnasium.
- GEORGE WASHINGTON McCOARD, M. A. Neil Ave.
Associate Professor of Mathematics.
- CHARLES WALTER MESLOH, M. A. University Grounds
Associate Professor of Germanic Languages and Literatures.
- ARTHUR WINFRED HODGMAN, Ph. D. 164 W. Ninth Ave.
Associate Professor of the Classic Languages.
- CHARLES SMITH PROSSER, M. Sc. 1362 Highland St.
Associate Professor of Historical Geology.
- JOHN ADAMS BOWNOCKER, D. Sc. 1594 Neil Ave.
Associate Professor of Inorganic Geology, and Curator of the Museum.
- JAMES ELLSWORTH BOYD, M. Sc. 25 Maynard Ave.
Assistant Professor of Physics.
- JOSEPH RUSSELL TAYLOR, M. A. The Dennison
Assistant Professor of English Literature.
- WILLIAM LUCIUS GRAVES, M. A. 1513 Forsythe Ave.
Assistant Professor of Rhetoric.
- CHARLES LINCOLN ARNOLD, M. Sc. 328 W. Eighth Ave.
Assistant Professor of Mathematics.

KARL DALE SWARTZEL, M. Sc.	57 E. Eighth Ave.
<i>Assistant Professor of Mathematics.</i>	
CHARLES A. BRUCE, A. B.	234 W. Tenth Ave.
<i>Assistant Professor of the Romance Languages.</i>	
JOHN H. SCHAFFNER, M. Sc.	61 W. Eleventh Ave.
<i>Assistant Professor of Botany.</i>	
CHARLES BRADFIELD MORREY, M. D.	King Ave.
<i>Assistant Professor of Anatomy and Physiology.</i>	
WILLIAM EDWARDS HENDERSON, Ph. D.	41 W. Eleventh Ave.
<i>Assistant Professor of Analytical Chemistry.</i>	
GEORGE H. McKNIGHT, Ph. D.	748 Neil Ave.
<i>Assistant Professor of Rhetoric and the English Language.</i>	
HENRY CLEVELAND ALLEN, LL. B.	The Dennison.
<i>Assistant Professor of Public Speaking.</i>	
FREDERICK EDWARD KESTER, M. A.	1473 Neil Ave.
<i>Instructor in Physics.</i>	
FRANCIS LEROY LANDACRE, B. A.	1332 Highland St.
<i>Assistant in Zoology.</i>	
JAMES STEWART HINE, B. Sc.	26 W. Fourth Ave.
<i>Assistant in Entomology.</i>	
DON CARLOS HUDDLESON, G. Ph.	249 W. Lane Ave.
<i>Assistant in Gymnasium.</i>	
FRANCIS MARION HAMILTON, B. A.	1355 North High St.
<i>Assistant in Philosophy and Education.</i>	
JOHN BELL SANBORN, Ph. D.	215 W. Tenth Ave.
<i>Assistant in American History.</i>	
MELVIN DRESBACH, B. Sc.	236 W. Eighth Ave.
<i>Fellow in Anatomy and Physiology.</i>	
JOHN BERNARD PARKER, B. A.	43 E. Ninth Ave.
<i>Fellow in Rhetoric.</i>	
EMMA LEANNA BALL, M. Sc.	207 W. Eighth Ave.
<i>Fellow in Mathematics.</i>	
DONALD ALEXIS KOHR, B. Ph.	1590 Neil Ave.
<i>Fellow in Chemistry.</i>	
JOHN WESLEY YOUNG, B. Ph.	883 E. Main St.
<i>Fellow in Mathematics.</i>	
HAROLD WARNER BROWN, B. Sc.	242 King Ave.
<i>Fellow in Physics.</i>	
HERBERT CHARLES GORE, B. Sc.	185 W. Ninth Ave.
<i>Fellow in Chemistry.</i>	
GRACE L. PITTS.	245 E. Gay St.
<i>Fellow in Economics.</i>	
ALICE DUFOUR, B. Ph.	374 Oak St.
<i>Fellow in Botany.</i>	

ADMISSION

The University is open on equal terms to both sexes.

The entrance examinations for 1900 will be held on Monday and Tuesday, June 7 and 8, and on Monday and Tuesday, September 17 and 18. A part of the examinations may be taken in June and the remainder in September. Conditions incurred at the June examinations must be removed at the September examinations.

Applicants must be at least sixteen years of age ; (for admission to the course preparatory to the study of law and journalism, must be at least eighteen years of age,) and must be provided with credentials of scholarship from the last instructors or from the last institution with which they have been connected, and with a certificate of good moral character.

There are three modes of admission to the University :

1. Certificates of the preparatory departments of colleges of approved standing and of normal schools in Ohio are accepted, if found satisfactory, in lieu of examination for preparatory studies, under the following conditions :

Each certificate must contain a detailed statement of the studies pursued, the text-books used, the amount of work done in each study, the amount of time devoted to it, the date of the examination, and the applicant's rank or standing in it. A copy of the course of study should accompany the certificate ; and both should be sent to the University not later than the first of September. The University cannot promise this recognition to those certificates presented during entrance week.

Blank certificates will be furnished upon application.

Applicants for admission who come from other colleges or universities are required to bring certificates of honorable dismissal.

Teachers' certificates (in force) will be accepted at their face value.

2. From time to time the University approves the courses of study in certain high schools of the state ; and the graduates of these high schools are admitted on presentation of cards issued to them at their graduation by the University through the principals of the high schools.

3. All other applicants are subject to examination on the groups of study mentioned below under the heading of the course in the college which they desire to enter.

Full equivalents for the text-books named will be accepted.

*The following are the requirements:

1. Arithmetic, Descriptive and Physical Geography, English Grammar and United States History.

2. *English (a)*—Composition and Rhetoric. Each applicant will be tested as to his ability to write clear and correct English. The test will be the writing of two essays of about two hundred words each. The first essay will be upon a subject drawn from the candidate's observation or experience. The second essay will be upon a subject drawn from the list of classics printed below.

The proper preparation for this requirement is sustained and regular practice in writing. The pupil should be afforded weekly practice in preparing written exercises—paragraphs, outlines, themes, reproductions and abstracts; and his written work should be corrected by the teacher and revised and rewritten by himself. Scott and Denney's Composition-Rhetoric is recommended as a guide for this work.

The pupil should be familiarized with those principles of Rhetoric which are most likely to help him in his composition work; such as the principles of sentential structure, outlining, paragraphing, and choice of words. The study of specimens of bad English is not recommended; the time usually devoted to this may be better spent in memorizing and reciting notable passages of prose and poetry selected from works read entire by the class. Exercises in speaking from a topical outline previously prepared by the class are recommended for drill in expressions and choice of words.

The subjects for the weekly written exercises should be so distributed that the pupil will have practice in four types—descriptive, narration, exposition and argumentation. Some of these subjects should be taken from the classics prescribed below, and other classics, preferably by the same authors, prescribed for parallel or subsidiary outside reading by the class; but fully one-half of the subjects upon which the pupil writes during the preparatory course should be drawn from his own observation and experience, especially subjects in description and narration.

(b) English Classics—Questions will be set for the purpose of testing the applicant's knowledge of the subject-matter, form and substance, of the following books; with the plot, purpose, literary style and

*An applicant for admission who may be somewhat in arrears in any given subject, will find opportunity to make up his work in the Columbus High Schools, which are fully accredited by the University.

peculiarities, incidents, and characters of which, the applicant should make himself thoroughly familiar.

1899. Chaucer's "The Knight's Tale," or Dryden's "Palamon and Arcite;" Milton's "Paradise Lost," Books I and II; Pope's "Iliad," Books I, VI, XXII and XXIV; The Sir Roger de Coverly Papers in "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Scott's "Ivanhoe;" Cooper's "The Last of the Mohicans;" Lowell's "The Vision of Sir Launfal;" Hawthorne's "The House of Seven Gables."

1900. Chaucer's "The Knight's Tale," or Dryden's "Palamon and Arcite;" Milton's "Paradise Lost," Books I and II; Pope's "Iliad," Books I, VI, XXII and XXIV; The Sir Roger de Coverly Papers in "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Scott's "Ivanhoe;" Cooper's "The Last of the Mohicans;" Macaulay's "Essay on Milton;" Burke's "Conciliation with the Colonies."

1901. "Macbeth;" Burke's "Conciliation with the Colonies;" Macaulay's "Essays on Milton and Addison;" Milton's "Comus, Lycidas, L'Allegro and Il Penseroso;" Scott's "Ivanhoe;" Goldsmith's "The Vicar of Wakefield;" Tennyson's "The Princess;" Coleridge's "The Ancient Mariner;" Lowell's "The Vision of Sir Launfal."

These or equivalent texts will require minute and critical study in class during at least one school year. The test here is the pupil's ability to analyze plot and character; to explain words, phrases and figures; to reproduce thought, to point out characteristics of style. Systematic class-room study of the texts themselves is the only adequate preparation. Literary history, literary biography and the comments of professional critics will not serve the purpose. The work in class should be intensive and disciplinary; there the distinction between the reading of literature and the study of classics should be sharply defined. Outside reading of other works preferably by the same authors, is recommended, and should be prescribed as the basis of part of the composition work; but this general reading and composition work should not be regarded as an adequate substitute for the minute study of the few classics prescribed above, and will not be accepted as preparation for this part of the English requirement.

3. *Algebra* — Taylor's Academic or equivalent.

4. *Botany* — Kellerman's Elementary Botany and Spring Flora or equivalent.

5. *Civil Government* — Fiske or Thorpe preferred.

6. *Geometry, Plane and Solid* — Venable, White, Wentworth or Wells.

7. *Greek* — Grammar (Goodwin's preferred) and Prose Composition; or the first 100 lessons of White's Beginner's Greek Book. Reading:

the first three books of Xenophon's *Anabasis*. At least two years should be devoted to this work.

8. *History*—Either Myers's General History, Fisher's Short History of the Nations, or Adams's European History; or Greek and Roman History.

9. *Latin*—Pronunciation (the Roman method): Grammar (an exact knowledge of the inflections is essential); Cæsar, the first four books of the *De Bello Gallico*; Cicero, six orations, including *Pro Lege Manilia*; Virgil, the first six books of the *Aeneid*, with Prosody; Prose Composition, Daniell or Collar or Jones or Dodge and Tuttle, entire.

10. *Physics*—Carhart and Chute, Gage, Avery or Appleton.

For the present, the *Greek* required for admission may be begun at the University, but without University credits.

TO THE LATIN COURSE IN PHILOSOPHY

The requirements are the same as for admission to the Course in Arts, except that instead of *Greek* the applicant may offer *French* or *German*: the requirements under these heads are those of the elementary course or grade of preparatory instruction, as formulated in the "Report of the Committee of Twelve of the Modern Language Association of America," and are here stated in the terms of that report.

French.—Applicants should be able to pronounce French accurately, to read at sight easy French prose, to put into French simple English sentences taken from the language of everyday life, or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below.

Two years should be given to this preparation.

During the first year the work should comprise: (1) Careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural of nouns, the inflection of adjectives, participles and pronouns; the use of personal pronouns, common adverbs, prepositions and conjunctions; the order of words in the sentence, and the elementary rules of syntax; (3) abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation.

During the second year the work should comprise: (1) The reading of from 250 to 400 pages of easy modern (nineteenth century) prose

in the form of stories, plays or historical or biographical sketches ; (2) constant practice, as in the previous year, in translating into French easy variations upon the texts read ; (3) frequent abstracts, sometimes oral and sometimes written, of portions of the text already read ; (4) writing French from dictation ; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences ; (6) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

German.—

(a) The Aim of the Instruction.

At the end of the elementary course in German the pupil should be able to read at sight, and to translate, if called upon, by way of proving his ability to read, a passage of very easy dialogue or narrative prose, help being given upon unusual words and constructions ; to put into German short English sentences taken from the language of every-day life or based upon the text given for translation, and to answer questions upon the rudiments of grammar as defined below.

(b) The Work to be Done.

During the first year the work should comprise : (1) Careful drill upon pronunciation ; (2) the memorizing and frequent repetition of easy colloquial sentences ; (3) drill upon the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs, and the more usual strong verbs, also upon the use of the more common prepositions, the simpler uses of the model auxiliaries, and the elementary rules of syntax and word-order ; (4) abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression ; (5) the reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

During the second year the work should comprise : (1) The reading of from 150 to 200 pages of literature in the form of easy stories and plays ; (2) accompanying practice, as before, in the translation into German of easy variations upon the matter read, and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages ; (3) continued drill upon

the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his knowledge with facility in the formation of sentences, and, secondly, to state his knowledge correctly in the technical language of grammar.

Until the year 1902, the *German* or *French* required for admission may be begun at the University, but without University credits. For the year 1902 and thereafter, the full requirements as above stated will be held to.

TO THE MODERN LANGUAGE COURSE IN PHILOSOPHY

The requirements are the same as for admission to the course in Arts; except that instead of *Latin* and *Greek*, the applicant may offer *Latin* and *French*, or *Latin* and *German*, or *French* and *German*, in the amounts specified above.

Until the year 1902, either the *French* or the *German*, (but not both) required for admission may be begun at the University, but without University credits. For the year 1902, and thereafter, the full requirements as above stated will be maintained.

TO THE ENGLISH COURSE IN PHILOSOPHY

The requirements are the same as for admission to the Modern Language Course in Philosophy. But in place of one of the foreign languages the applicant may offer the following group :

1. *Chemistry*—Williams or Remsen.
2. *English Literature*—Pancoast's Introduction to English Literature and an acquaintance with representative works in each period ; or, *English History*—Montgomery.
3. *Physiology*—Martin (briefer course).

Until the year 1902, one modern language required for admission may be begun at the University, but without University credits. For the year 1902, and thereafter, the full requirements as stated above will be held to.

TO THE COURSE IN COMMERCE AND ADMINISTRATION

The requirements are the same as for admission to the Modern Language Course in Philosophy.

TO THE COURSE IN SCIENCE

The requirements are the same as for admission to the Modern Language Course in Philosophy.

TO THE SHORT COURSE PREPARATORY TO LAW AND JOURNALISM

The requirements for admission to any of the four year courses as stated above ; except that the applicant must not be less than eighteen years of age.

Admission to Special Studies.

Students who desire to pursue special lines of work in any of the Colleges of the University, and do not desire to become candidates for degrees, will be admitted on the following conditions :

1. The regular entrance requirements must be satisfied.
2. But applicants who are not less than twenty-one years of age after obtaining credit for the common English branches and for such other subjects as may be necessary to qualify them for the classes that they wish to enter, may, on the presentation of satisfactory reasons, be admitted to any class in the College ; provided, that if any student who has been admitted on these conditions afterwards becomes a candidate for a degree, he shall pass the omitted entrance examinations at least twelve months before the degree is conferred.
3. On entering the College, students desiring to pursue special work are required to lay before the Executive Committee, for approval or modification, a written statement of the end they have in view, the studies proposed for the attainment of that end, and the probable period of attendance. Such students will be held as strictly to their accepted schemes of work as are the regular undergraduates to their courses of study.
4. Permission to enter as special undergraduates will be refused to all who fail to give satisfactory evidence of definiteness of purpose, and will be withdrawn whenever the conditions on which it was granted cease to exist.

Admission to Advanced Standing.

1. Applicants who do not come from some other University or College must first obtain admission to the College in the manner already described. They will then be examined on the undergraduate studies for which they ask credits.
2. Applicants who come from the collegiate department of an approved College, and who bring explicit and official certificates describing their course of study and scholarship, and also certificates of honorable dismissal, will be admitted without examination except such as may be necessary to determine what credit they are to receive here for work done in the College from which they come.

Admission to Graduate Work.

Graduates of this or other institutions may, on application to the Faculty, enter the College and pursue such lines of work as may be arranged or approved by the Executive Committee. Such graduate students are subject to all the ordinary regulations (as to fees, attendance, etc.), prescribed for undergraduates.

Advanced Degrees.

1. The degree of Master of Arts will be conferred upon candidates holding the degree of B. A. or B. Ph. from this University or from other institutions making equivalent requirements for those degrees, upon the satisfactory completion, during not less than one year of residence (devoted exclusively to such work), of an approved course of study, covering a major subject and an allied minor subject. The major subject (two-thirds) shall be graduate work, taken in one of the departments of the Arts, Philosophy and Science College. The minor subject (one third) may be in graduate work.

2. The degree of Master of Science will be conferred upon candidates holding the degree of Bachelor of Science from the General Science Course of this University or from institutions making equivalent requirements for this degree, and also upon graduates from the College of Engineering of this University, upon the terms specified for the degree of Master of Arts; except that the major subject must be taken in one of the Departments of Science in the Arts, Philosophy and Science College. The minor subject must be in an allied Science.

3. The degree of Master of Arts will be conferred upon candidate holding the degree of Bachelor of Arts or Bachelor of Philosophy and the degree of Master of Science upon candidates holding the degree of Bachelor of Science from this University or from other institutions making equivalent requirements for these degrees, and the degree of Master of Science will be conferred on graduates from the College of Engineering of this University, on the completion, during not less than one year of residence, of a course of study in one or more of the departments of the College of Arts, Philosophy and Science, not less than one-third of which course must be graduate work and not more than two-thirds may be such undergraduate work as is announced to be elective, such course to be subject to the approval of the Executive Committee of the Faculty of the College of Arts, Philosophy and Science. But a degree conferred under the provisions of this paragraph shall in no case be counted towards the degree of Doctor of Philosophy, or Doctor of Science.

4. With the consent of the Faculty the work of candidates for the Master's degree may be distributed over more than one year.

5. Each candidate for a Master's degree must also prepare and submit a thesis, and after its acceptance, be examined upon the work assigned him.

6. The degree of Doctor of Philosophy or of Doctor of Science will be conferred upon holders of the appropriate baccalaureate degree from

this University, or from other institutions making equivalent requirements for the first degree, upon the satisfactory completion of three years of resident graduate work in the Arts, Philosophy and Science College, including thesis and examinations. Holders of the degree of Master of Arts or Master of Science from this University, under the conditions prescribed in paragraph one or two, or from other institutions making equivalent requirements for these degrees, may receive the Doctor's degree on the satisfactory completion of two years of resident graduate work after obtaining the Master's degree. On approval of the Faculty, the work of the first year or of the first two years, of the three, may be done at another University which offers equivalent graduate work.

7. Candidates for the degree of Doctor of Science must take their work wholly in Science.

8. With the consent of the Faculty the work required of candidates for Doctor's degree may be distributed over more than three years.

Fellowships.

To encourage graduates of this University, and of other similar and approved institutions in this State, to continue their work and to complete the courses necessary to second (and other) degrees, the University authorities have established fellowships in several departments. These demand about one-half of the time of the fellow for laboratory instruction or other similar assistance—as far as possible, along the line of his graduate study. The remainder of his time is given to graduate work. The fellowships pay from \$250 to \$300 for the University year.

Following are the fellowships for the academic year 1899-1900 as far as at present determined :

Anatomy and Physiology, Botany, Chemistry (two), American History and Political Science, Mathematics (two), Philosophy, Rhetoric, and English Language.

In addition to these, Mr. Emerson McMillin has established two fellowships: One in Astronomy, 300 dollars for the academic year; and one in Economics, 250 dollars for the academic year. No service is required in these fellowships, and fellows are expected to give their entire time to their graduate work.

Correspondence should be directed to the Executive Office of the University.

Prizes.

Through the generosity of Hon. Wm. J. Bryan an annual prize of fifteen dollars is offered for the best essay on the principles underlying the form of government of the United States. Competition for this prize is open to all students of the University.

The Edward Thompson Company offer annually to the student writing the best essay on a legal theme selected by the Faculty of the College of Law, the second edition of the English and American Encyclopedia of Law, which includes about thirty volumes.

Other prizes are offered in special departments, for which see department circulars or the heads of the departments.

COURSES OF STUDY

This College offers (besides one short course of study ; described on page 38) six four-year courses of study leading to degrees. All are planned so as to lay first the foundations for investigation in the more important directions, and then, in the more advanced stages of the work, to allow much liberty of election. By the end of the second year all students must have studied two languages, at least one science, mathematics, rhetoric, English literature, history and economics ; except that students in General Science omit the literature and add two sciences. Philosophy is required of all in the third year. Thus a student who had insufficient acquaintance with his own tastes and tendencies when he entered the University, and who selected an unsatisfactory curriculum, can rectify the error by transfer, with no very great loss of time.

2. Electives. Elective studies sufficient to bring the total work up to sixteen hours a week in the third year, and to fifteen hours a week in the fourth year, must be chosen from the courses in this College ; except that, not earlier than the third year, studies equivalent to five hours a week for one year may be chosen from any courses taught in the University (and five hours more may be chosen by students in General Science from courses in the College of Engineering) ; provided that the studies are such as the student is qualified to pursue. But restrictions are imposed upon electives in the course in Commerce and Administration. See page 35.

3. Major Study. Not later than the beginning of the third year each student shall elect a major study in one department, or with the consent of the professors in charge in two allied departments, in this College. To the major study he shall devote not less than four nor more than ten hours a week during the third year, and not less than five nor more than ten hours a week during the fourth year. With the approval of the proper authority, the major study may be entered upon in the second year ; an equivalent amount of the work of that year, not in the line of the major study, being postponed to the third year ; but the amount so postponed shall not exceed four hours a week : in this case the elective work of the third year will be reduced by a like amount. But see page 37 for the major study in the course in General Science.

4. Thesis. At the beginning of the fourth year each student will take up as thesis work some special line of inquiry within the field of

his major study, subject to the approval of the professor in charge of the department, and must devote to it two hours per week, or its equivalent, independently of his other work. The subject, together with a written approval of it by the head of the department within which it lies, must be submitted to the President of the University, not later than the fifteenth day of December of the fourth year. The complete thesis must be submitted not later than the second Saturday before Commencement Day. But see page 37 for thesis in General Science.

5. No one will be admitted to candidacy for a degree in this College later than the first day of October of his last year.

COURSE IN ARTS.

Degree : Bachelor of Arts.

From the very beginning, the University has not failed in that part of its duty which is involved in offering a *liberal* education to the youth of the State. In the course leading to the degree of Bachelor of Arts, especial emphasis is laid on the culture and discipline derived from the study of Greek, Latin, and the modern languages and literatures; together with mathematics, history, economics and science. A proper proportion among these studies is assured by the fact that the work of the first two years is mainly prescribed; options being allowed only within the limits of groups. In the third and fourth years the student is permitted a wide election; philosophy being the only study specifically prescribed. This freedom of election is not peculiar to the Course in Arts, and is mentioned only to show that the course is organized on the same broad lines that mark the work of the University in general. It is believed that the curriculum of this course approximates as nearly as is desirable to that of the "one-course" colleges, and that its baccalaureate degree is not inferior in significance to the traditions which attach to that degree elsewhere.

In the following pages the seven Courses of Study offered by this College are outlined, and each is introduced with a brief statement of its most essential features and aims. The student should examine them carefully before making his selection. All members of the Faculty, but the Dean and the members of the Executive Committee most especially, are always glad to advise with the students respecting the choice of a course of study.

The figures in parenthesis following the title of a study indicate the number of that study in the Department Courses, which are fully outlined in the alphabetical order of the Departments, in the pages following these outlines of the Courses of Study.

The figure not in parenthesis indicates the number of class exercises each week, and the amount of credit assigned to each study.

COURSE IN ARTS.

FIRST YEAR.

FIRST SEMESTER	Credit hours	SECOND SEMESTER	Credit hours
Greek (51)—Xenophon.	4	Greek (52)—Herodotus, Homer.	4
Latin (51)—Cicero.	4	Latin (52)—Livy, Horace.	4
Mathematics (67)—Algebra, Analy- tics, Calculus.	3	Mathematics (68)—Trigonometry, Analytics, Calculus.	3
Rhetoric (51)—Composition.	2½	Rhetoric (52)—Composition	2¼
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

One of the following (the choice being for the year):

Botany (51) or (57)	3	Botany (52) or (58)	3
Botany (55)—Systematic and Physiological.	4	Zoology (64)—Comparative.	4
Chemistry (51)—Inorganic.	3	Chemistry (52)—Inorganic.	3
Physics (51) or (53)—Mechanics, etc.	3	Physics (52) or (54)—Electricity, etc.	3
Zoology (51)—Comparative.	3	Zoology (52)—Comparative.	3

SECOND YEAR.

Greek (53)—Lysias.	4	Greek (54)—Homer, Plato.	4
†History (55)—United States.	} 4	Economics (52)—Elementary.	} 4
or		or	
†Economics (51)—Elementary.	4	History (56)—United States.	4
Latin (53)—Horace, Pliny.	4	Latin (54)—Tacitus, Juvenal.	4
English Literature (51)—Introductory	4	Rhetoric (54)—Analysis of Prose.	4
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

THIRD YEAR.

Philosophy (51)—Psychology.	4	Philosophy (52)Logic and Ethics.	4
Major Study—see par. 3, page 24	4	Major Study—see par. 3, page 24	4
Elective—see par. 2, page 24	8	Elective—see par. 2, page 24	8

FOURTH YEAR.

Major Study (as in third year).	5	Major Study (as in third year).	5
Electives (as in third year).	10	Electives (as in third year).	10

Thesis, two hours a week through the year—see paragraph 4, page 24

† The subject not taken the first semester will be taken the second semester.

LATIN COURSE IN PHILOSOPHY.

Degree: Bachelor of Philosophy.

Latin and either French or German form a part of the regular requirements for admission to this course. In it the attempt is made to combine in the language training some of the benefits of the study of a classical language with the advantages of a knowledge of the most important modern tongues. This is its characteristic feature.

In required studies, other than those of language, in the number and range of elective subjects and in the freedom of choice among them, it differs very little from the other non-scientific courses offered in this college.

LATIN COURSE IN PHILOSOPHY.

FIRST YEAR.

FIRST SEMESTER	Credit hours	SECOND SEMESTER	Credit hours
French (51)—Elementary, or (55). or German (51)—Elementary, or (55). Latin (51)—Cato, Cicero. Mathematics (67)—Algebra, Ana- lytics, Calculus. Rhetoric (51)—Composition. Cadet Service (men). Hygiene and Phys.Train.(women).	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>2½</div> </div>	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>2½</div> </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>2½</div> </div>

One of the following (the choice being for the year):

Botany (51) or (57). Botany (55)—Systematic and Physio- logical Chemistry (51)—Inorganic. Physics (51) or (53)—Mechanics, Heat, etc. Zoology (51)—Comparative Zoology.	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>3</div> </div>
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SECOND YEAR.

French (55)—Modern Literature or German (55)—Literature. *History (55)—United States or *Economics (51)—Elementary. Latin (53)—Horace, Pliny. *English Literature (51)—Introductory. Cadet Service (men). Hygiene and Phys.Train.(women).	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div>	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">}</div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div>
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THIRD YEAR.

Philosophy (51)—Psychology. Major Study—(see par. 3, page 24 Elective—(see par. 2, page 24	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>8</div> </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>4</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>8</div> </div>
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FOURTH YEAR.

Major Study (as in third year). Electives (as in third year). Thesis, two hours a week through the year (see paragraph 4 page 24	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>5</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>10</div> </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>5</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>10</div> </div>
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*The subject not taken the first semester will be taken the second semester.

THE MODERN LANGUAGE COURSE IN PHILOSOPHY.

Degree: Bachelor of Philosophy.

The Modern Language Course in Philosophy is designed to furnish students with special training in both French and German, these two languages taking the place of Greek and Latin in the Course in Arts, or of the Latin combined with one modern language in the Latin Course in Philosophy. Two full years in both of these modern languages are required and the student is given every opportunity to pursue advanced courses in the same subjects.

MODERN LANGUAGE COURSE IN PHILOSOPHY.

FIRST YEAR.

FIRST SEMESTER	Credit hours	SECOND SEMESTER	Credit hours
French (51) or (55).	4	French (52) or (56).	4
German (51) or (55).	4	German (52) or (56).	4
Mathematics (57)—Algebra, Analytics, Calculus.	3	Mathematics (58)—Trigonometry, Analytics, Calculus.	3
Rhetoric (51)—Composition.	2½	Rhetoric (52)—Composition.	2½
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

One of the following (the choice being for the year):

Botany (51) or (57).	3	Botany (52) or (58).	3
Botany (55)—Systematic and Physi- ological.	4	Zoology (54)—Comparative.	4
Chemistry (51)—Inorganic.	3	Chemistry (52)—Inorganic.	3
Physics (51) or (53)—Mechanics, Heat, etc.	3	Physics (52) or (54)—Electricity, etc.	3
Zoology (51)—Comparative.	3	Zoology (52)—Comparative.	3

SECOND YEAR.

French.	4	French.	4
German.	4	German.	4
*History (55)—United States or *Economics (51)—Elementary.	4	Economics (52)—Elementary or History (56)—United States.	4
Rhetoric (53)—Analysis of Prose.	4	English Literature (52)—Intro- ductory.	4
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

THIRD YEAR.

Philosophy (51)—Psychology.	4	Philosophy (52)—Logic and Ethics.	4
Major Study—see par. 3, page 24.	4	Major Study—see par. 3, page 24.	4
Elective—see par. 2, page 24.	8	Elective—see par. 2, page 24.	8

FOURTH YEAR.

Major Study (as in third year).	5	Major Study (as in third year).	5
Electives (as in third year).	10	Electives (as in third year).	10

Thesis, two hours a week through the year (see paragraph 4, page 24).

*The subject not taken the first semester, will be taken the second semester.

ENGLISH COURSE IN PHILOSOPHY.

Degree: Bachelor of Philosophy.

This Course differs from the preceding three in that it lays less emphasis on the study of the foreign languages, ancient and modern, either in the preparatory school or in the University, substituting for a part of such language work studies in other lines.

From choice or necessity many persons in their preparatory training, study but one foreign language, and they and others desire to pursue a general university course without devoting so much time as in other courses to linguistic studies. While the University authorities believe that in most cases the study of two languages other than English in preparation for College is advisable and that the further study of these and other foreign languages in the University is desirable, they also believe that for part of these, equivalent work in the English language and in other lines may without detriment be accepted. In this belief the English Course in Philosophy has been framed.

The requirements for admission, which in all other respects are the same as for the other courses in the College, permit the candidate to offer any one of the four languages — Latin, Greek, French, German — and in place of any second foreign language an equivalent amount of training in English literature or English history, chemistry, and physiology; or a second foreign language may be offered in place of the subjects just named.

In the University itself in this course the study of one modern language is required for two years. The special feature of the course is the emphasis laid on the English language, which is studied historically and critically in courses not required elsewhere in the College. Special stress is also laid on European history and on philosophy, both of which are required in greater amount than in other courses. These studies replace the second language required in the first two years of the Arts, Latin, and Modern Language Courses. At the same time full opportunity is afforded in the electives for as complete a study of additional foreign language (modern) as the student may desire.

Experience has shown that the students in this course most naturally specialize during their last two years, in English language and literature, in philosophy, in history, in political science, or in economics. The course is well adapted for specialization in any one of these fields, and is also an excellent preparation for the professional study of law, or for the pursuit of journalism.

ENGLISH COURSE IN PHILOSOPHY.

FIRST YEAR.

FIRST SEMESTER	Credit hours	SECOND SEMESTER	Credit hours
French* (51)—Elementary or German* (51)—Elementary.	} 4	French (52)—Prose and Plays or German (52)—Elementary.	} 4
European History (151).		European History (152).	
Mathematics (67)—Algebra, Analytics, Calculus.	3	Mathematics (68)—Trigonometry, Analytics, Calculus.	3
Rhetoric (51)—Composition.	2½	Rhetoric (52)—Composition.	2½
Rhetoric and English Language (69)— History of English.	2	Rhetoric and English Language (70)— Development of Prose.	2
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

One of the following (the choice being for the year):

Botany (51) or (57).	3	Botany (52) or (58).	3
Botany (55)—Systematic and Physio- logical.	4	Zoology (64)—Comparative.	4
Chemistry (51)—Inorganic.	3	Chemistry (52)—Inorganic.	3
Physics (51) or (53)—Mechanics, Heat, etc.	3	Physics (52) or (54)—Electricity, Mag- netism, etc.	3
Zoology (51)—Comparative.	3	Zoology (52)—Comparative.	3

SECOND YEAR.

French (52)—Modern Literature or German (55)—Literature.	} 4	French (56)—Modern Literature or German (56)—Lyrics.	} 4
*History (55)—United States or Economics (51)—Elementary.		Economics (52)—Elementary or History (56)—United States.	
Philosophy (53).	3	Philosophy (54).	3
Rhetoric (53)—Analysis of Prose.	4	English Literature (52)—Introduct'y	4
Rhetoric and English Language (71)— Old English.	2	Rhetoric and English Language (72) —Old English.	2
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

THIRD YEAR.

Philosophy (55).	3	Philosophy (56).	3
Major Study—(see par. 3, page 24).	4	Major Study—(see par. 3, page 24).	4
Elective—(see par. 2, page 24).	3	Elective—(see par. 2, page 24).	3

FOURTH YEAR.

Major Study (as in third year).	5	Major Study (as in third year).	5
Electives (as in third year).	10	Electives (as in third year).	10
Thesis, two hours a week through the year (see paragraph 4, page 24).			

*The subject not taken the first semester will be taken the second semester.

COURSE IN COMMERCE AND ADMINISTRATION.

Degree: Bachelor of Philosophy.

The general purpose of this course is to give the student such training as will tend to prepare him for a business career (either for private business as in commerce and trade ; or for public business as in administration or an intelligent discharge of the ordinary duties and responsibilities of citizenship).

It is a specialized but not a technical course. It aims at striking a medium between what may be called purely cultural instruction on the one hand and professional instruction on the other.

The following features differentiate its work and purpose from other four year courses in this College :

(1) The studies being selected and arranged with a view to distinct lines of specialization, the principle of limited electives is introduced in the third and fourth years.

(2) Studies in law to the amount of five hours per week for one year are *required* in the third year.

(3) It prepares the student to undertake with greater advantage graduate work in the three departments: American History and Political Science, Economics and Sociology, and European History.

(4) It offers an academic degree for four years of prescribed work which may be recommended as a preparation for the further study of law, thus distinguishing this course from that preparatory to Law and Journalism, for which no degree is given.

COURSE IN COMMERCE AND ADMINISTRATION.

FIRST YEAR.

FIRST SEMESTER.	Credit hours	SECOND SEMESTER.	Credit hours
French (51)—Elementary.	4	French (52)—Prose and Plays.	4
German (51)—Elementary.	4	German (52)—Elementary.	4
European History (151).	3	European History (152).	3
Mathematics (67)—Algebra, Analytics, Calculus.	3	Mathematics (68)—Trigonometry, Analytics, Calculus.	3
Rhetoric (51)—Composition.	2½	Rhetoric (52)—Composition.	2½
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

SECOND YEAR.

French (55)—Modern Literature or German (55)—Literature.	} 4	French (56)—Modern Literature or German (56)—Lyrics.	} 4
*History (55)—United States or *Economics (51)—Elementary.	} 4	Economics (52)—Elementary or History (56)—United States.	} 4
History (153)—England.	3	History (154)—England.	3
Rhetoric (53)—Analysis of Prose.	4	English Literature (52)—Introductory	4
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

One of the following (the choice being for the year):

Botany (51) or (57).	3	Botany (52) or (58).	3
General Chemistry (51)—Inorganic.	3	General Chemistry (52)—Inorganic.	3
Physics (51) or (53)—Mechanics, etc.	3	Physics (52) or (54)—Electricity, etc.	3
Zoology (51)—Comparative.	3	Zoology (52)—Comparative.	3

THIRD YEAR.

†Elementary Law.	6	†Contracts.	4
Philosophy (51).	4	Philosophy (52).	4
Major Study (see par. 3, page 24).	4	Major Study (see par. 3, page 24).	4

ELECTIVE.

From the courses in the departments mentioned below, selection may be made to make up the required number of hours. Not less than sixteen nor more than eighteen hours a week are permitted and no substitutions or options further than those indicated below:

Economics	2 or 3	Economics	2 or 3
German	2 or 3	German	2 or 3
History	2 or 3	History	2 or 3
Political Science	2 or 3	Political Science	2 or 3
Rhetoric (57)	3	Rhetoric (58)	3
Romance Language	2 or 3	Romance Language	2 or 3

FOURTH YEAR.

Major Study (as in third year).	5	Major Study (as in third year).	5
Electives (as in third year).	10	Electives (as in third year).	10
Thesis, two hours a week through the year (see paragraph 4, page 24).			

* The subject not taken the first semester will be taken the second semester.

† In place of Elementary Law six hours; Commercial Law four hours and Corporations (Private and Municipal) two hours may be substituted. Also in place of Contracts, four hours, any two of the following may be substituted: Corporations (Private), Insurance, Agency, Sales, Mortgages.

COURSE IN GENERAL SCIENCE.

Degree: Bachelor of Science.

This course is intended to meet the needs of students who wish either to become specialists in some branch of science, or to make work in science an important part of a college education.

Recognizing the correlation and mutual dependence of the leading branches of science, training in the fundamentals of botany, chemistry, mathematics, physics, physiology and zoology is required during the first two years of the course. Astronomy and geology are required during the third year. 'At the beginning of the third year, the student is required to choose as his major subject, "Mathematics, or a Science in which Laboratory instruction is given." The subject so chosen is to be pursued during the third and fourth years, and the thesis, required for graduation, is to be taken in the major subject.

Other required subjects are: during the first and second years, modern languages and rhetoric; and during the third year, philosophy. A reading knowledge of both French and German should be possessed by each graduate.

The elective hours of the course, covering one-fourth of the third year and two-thirds of the fourth, may be used by the student either in scientific or in literary subjects.

COURSE IN GENERAL SCIENCE.

FIRST YEAR.

FIRST SEMESTER.	Credit hours	SECOND SEMESTER.	Credit hours
Botany (55)—Systematic and Physiological.	4	Zoology (64)—Comparative.	4
French (51)—Elementary	} 4	French (52)—Prose and Plays	} 4
or		or	
German (51)—Elementary.		German (52)—Elementary.	
Chemistry (51)—Inorganic.	3	Chemistry (52)—Inorganic.	3
Mathematics (67),(65)—Algebra, Analyt- ics, Calculus	} 4	Mathematics (68), (66)—Trigonom- etry, Analytics, Calculus	} 4
or	} 5	or	} 5
Mathematics (55),(57)—Trigonometry and Algebra.		Mathematics (56), (58)—Algebra and Analytics.	
Rhetoric (51)—Composition.	2½	Rhetoric (52)—Composition.	2½
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

SECOND YEAR.

Economics (51)—Political Economy.	4	Rhetoric (54)—Analysis of Prose.	4
[French	} 4	French	} 4
or		or	
[German.		German.	
Physics (51)—Mechanics, Heat, etc.	3	Physics (52)—Electricity, etc.	3
Physiology (51)—Human Anatomy.	3	Physiology (52).	2
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

Together with one of the following subjects, to be continued through the year:

(a) Botany (57), (58), each three hours credit or (59), (60), each five hours credit for a semester. (b) General Chemistry (53), (54), each five hours credit. (c) Mathematics (59), (61), (60), (62), each five hours credit for a semester. (d) Zoology (53), (54), each three hours credit, or (55), (56), each five hours credit.

THIRD YEAR.

*Geology (61)	} 3	Geology (62)	} 3
and		and	
Astronomy, General (61)	} 2	Astronomy, General (62)	} 2
or		or	
[French or German**	} 4	**Astronomy, Mathematical (54)	} 5
Philosophy (53).		Philosophy (54).	
*Major Study.	4	Major Study.	4
Elective (see par. 2, page 24).		Elective (see par. 2, page 24).	

FOURTH YEAR.

Major Study (as in third year).	5	Major Study (as in third year).	5
Electives (as in third year).	10	Electives (as in third year).	10

THESIS.

As a requisite for graduation each student in this course must present an acceptable thesis embodying the results of a special research. The line of research must lie within the field of the major study, and is subject to the approval of the professor or professors having the major study in charge; and the student shall enter on this work not later than the beginning of the Senior year, and shall devote to it not less than two hours a week, or its equivalent, for one year, independently of his other work. The subject of thesis, together with a written approval of it by the professor or professors directing the investigation, must be submitted to the President of the University, not later than the beginning of the second semester of the fourth year, and the completed thesis must be submitted not later than the second Saturday before Commencement Day. In case two or more students are pursuing the same major study, a joint research and thesis may be made.

* Major Study. Not later than the beginning of the Third Year each student in this course shall elect a Major Study in Mathematics or in a Science in which Laboratory instruction is given. This Major Study shall be in one department, or with the consent of the professors in charge, in two allied departments in this college. To the Major Study the student shall devote not less than five hours nor more than ten hours a week during the Fourth Year.

It is desired that the student on completing this course, shall possess a good reading knowledge of both French and German. Therefore, the student entering on both French and German will take both languages in the University, each for one year. He who enters on one Modern Language will continue that language one year in case he cannot read easy prose at sight and take the other language for one year. In case a reading knowledge of one Modern Language is possessed, the student will take the other language two years. The third year of Language in the case of students making the Mathematics a specialty will be that language of which the student has the less knowledge.

** Students who elect Mathematics as their Major Study shall, in the Third Year, take French or German four hours the first semester and Astronomy five hours the second semester.

COURSE PREPARATORY TO LAW AND JOURNALISM.

This course groups together the studies that are generally believed to be most useful to one who intends later to study law or to begin work on a newspaper. It differs from the four-year courses in this college (1) by omitting the study of mathematics entirely; (2) by requiring only one year of language other than English; and (3) by thus enabling the student to devote the greater part of his time for three years to the study of History, Economics, Political Science, English Language and Literature, Rhetoric, and to continuous practice in English Composition. A certificate is given to each student completing this course. Students who spend a fourth year at the University are able to complete the requirements for the degree of Bachelor of Philosophy in the English Course, by proper selection of studies.

COURSE PREPARATORY TO LAW AND JOURNALISM.

FIRST YEAR.

FIRST SEMESTER.	Credit hours	SECOND SEMESTER.	Credit hours
English Literature(51)—Introductory.	4	Economics (52)—Elementary.	4
French (51)—Elementary	} 4	French (52)—Prose and Plays	} 4
or		or	
German (51)—Elementary.		German (52)—Prose and Plays.	
European History (151).	3	European History (152).	3
Rhetoric (51)—Composition.	2½	Rhetoric (52)—Composition.	2½
Science—Elective.	3	Science—Elective.	3
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women.)	

SECOND YEAR.

Economics (55)—Practical Problems.	2	Economics(56)—Industrial Reforms.	2
English Literature—Elective.	2 or 3	English Literature—Elective.	2 or 3
European History (153)—England.	3	European History (154)—England.	3
American History(55)—United States.	4	Rhetoric (54)—Analysis and Prose.	4
Philosophy (53) -Psychology.	3	Philosophy (54)—Logic.	3
Rhetoric (55)—Newspaper work.	1	Rhetoric (56)—Newspaper work.	1
Rhetoric (69)—History of English.	2	Rhetoric(70)—Development of Prose.	2
Cadet Service (men).		Cadet Service (men).	
Hygiene and Phys. Train. (women).		Hygiene and Phys. Train. (women).	

NOTE—A student desiring to continue French or German may substitute French (55 and 56), or German (55 and 56), for four hours of the studies of the second year. The studies thus deferred must be taken in the third year.

THIRD YEAR.

Not less than sixteen nor more than seventeen hours per week, including studies deferred from the second year ; selections to be made from the following, subject to the conditions named in the "Departments of Instruction." In view of the fact that this is a special course for special purposes, no substitutions or options further than those indicated below, will be permitted.

American History (63), (65).	3	American History (64), (66).	3
Economics (53), (57), (59).	2	Economic (54), (58), (60).	2
English Literature.	2 or 3	English Literature.	2 or 3
European History (155), (157), (161).	2	EuropeanHistory (156), (158), (162).	2
Education (57).	2	Education (54).	2
Philosophy (55) - Ethics.	3	Philosophy (56)—Modern.	2
Political Science (51), (55).	2	Political Science (52), (56).	2
Political Science (53).	3	Political Science (54).	2
Rhetoric (57), (69), (75).	3	Rhetoric (58), (70), (76).	3
Rhetoric (59).	2	Rhetoric (60).	2

Course Preparatory to the Study of Medicine.

The three-year course preparatory to the study of Medicine has been discontinued owing to the fact that the completion of this course would not, under the present requirements of the Association of Medical Colleges, enable the student to gain credit for a year's time in the medical course. While it is deemed wiser for the present not to offer a special four-year course leading to a degree, it is desired to point out that a student having a medical career in view when entering here, or determining on such a career within the first year or two of his university course, may make such elections in any of the general courses as to gain a full year's credit, both in work and time allowance in a medical college.

While studies differ in different medical curricula it may be noted that Chemistry, Zoology, Comparative Anatomy, Embryology, Histology, Physiology, Bacteriology and Materia Medica, as taught here will be accepted in the medical schools and election of these in their proper sequence will enable the student to qualify himself very thoroughly for his medical course.

Students having medicine in view will do well to consult with the professors having these studies in charge, with reference to the best sequence of election and those having a particular medical college in view can make their selections with special reference to its requirements. Students already entered in the Course Preparatory to the Study of Medicine may complete the work as arranged at the time of their entrance.

THE DEPARTMENTS.

1900—1901.

AMERICAN HISTORY AND POLITICAL SCIENCE.

[UNIVERSITY HALL, ROOMS 27, 48 AND 18]

The courses in American History and Political Science are of two kinds: (1) information courses (such as Courses 55, 63, 65, 73 and others, in History, and 51, 52, 53, and others in Political Science), the primary object of which is knowledge of the history and development of definite periods, movements, or political institutions; and (2) training courses (such as Courses 71, 72, 61 and 62), the object of which is to familiarize the student with historical material and its use, and to train him in independent investigations. These last are essential for those whose major work as undergraduates lies within this department.

After History 55 (or 56), has been taken the remaining courses in American History and Political Science will be most naturally approached in the following order: In the third year, first semester, History 63 (or 65), 71; Political Science, 53, 55; second semester, History 64 (or 66), 72; Political Science, 54, 52. In the fourth year, first semester, History 65 (or 63), 73, 61; Political Science, 51; second semester, History 66 (or 64), 74, 62; Political Science, 56. In the third year all students doing their major work in this department must be enrolled in History 71 and 72; for the year 1900-1901, all such students in the fourth year must be enrolled in History 61 and 62.

As several of the courses are given but once in two years, students may find it necessary to depart slightly from the foregoing suggestions as to the order of elections.

AMERICAN HISTORY.

Professor Knight, Dr. Sanborn.

Course 55 (or 56) must precede all other courses in American History. All students intending to take advanced courses in American History should take English History (European History 153 and 154, Department of European History) as early as possible in their course.

FIRST SEMESTER.

55. *Political History of the United States.* Lectures, text-books, prescribed readings and topical reports. Hart's Formation of the Union; Wilson's Division and Re-union. Four times a week. This Course is repeated in the Second Semester (as Course 56). Of students who are required to take this subject, those whose names begin with the letters from A to K will take it in the first semester; others will take it in the second semester (as Course 56). Two sections.

DR. SANBORN.

61. *Seminary for Research Work in American History and Political Science.* Two hours a week (at one meeting).

PROFESSOR KNIGHT.

In 1900-1901 all fourth year students, who elect their Major Study in the department of American History and Political Science must take this course. Open, as elective, to other students, graduate and advanced undergraduate, on permission of the instructor.

63. *American Colonial History.* The political and social development of the American Colonies, the growth of colonial self-government and of the idea of union. Lectures, assigned readings and special reports. Three times a week.

PROFESSOR KNIGHT.

(Given biennially. Not offered in 1900-1901.)

65. *Constitutional and Political History of the United States, 1850-1876.* Secessions, Civil War and Reconstruction; a study of the causes and the effects of the downfall of slavery. Lectures and assigned readings. Three times a week.

PROFESSOR KNIGHT.

(Given biennially. Offered in 1900-1901.)

71. *Historical Material and its Use.* Lectures on elementary historical bibliography and the use of American historical documents, with practical exercises. Especially designed for students intending to do advanced work in American history and political institutions. Once a week.

DR. SANBORN.

All students electing their Major Study in the department of American History and Political Science are expected to take this course in their third year. Open as elective to others on permission of the head of the department.

73. *Territorial Development of the United States, 1789-1850.* Growth of the United States, the acquisition and settlement of new territories, and the effect of those territories on the life of the nation. Lectures and assigned readings. Twice a week.

DR. SANBORN.

SECOND SEMESTER.

56. *Political History of the United States.* Lectures, text-books, prescribed readings and topical reports. Hart's Formation of the Union; Wilson's Division and Re-union. Four times a week. (This is a repetition of Course 55 and will be taken in the second semester by those students (of whom it is required) whose names begin with letters from L to Z.) Two sections.

DR. SANBORN.

62. *Seminary for Research Work in American History and Political Science.* Two hours a week (at one meeting). PROFESSOR KNIGHT.

This is a continuation of Course 61, and is open only to those who have had Course 61. In 1900-1901 all fourth year students electing their Major Study in the department of American History and Political Science must take this course. Open, as elective, to other students, graduate and advanced undergraduate, on permission of the instructor.

64. *Constitutional and Political History of the United States.* The Formative Period, 1776-1815. An advanced course covering the organization and establishment of the United States as a nation. Lectures, assigned readings and special investigations. Three times a week.

PROFESSOR KNIGHT.

(Given biennially. Not offered in 1900-1901.)

66. *American Diplomatic History.* History of the foreign relations, policy and treaties of the United States. Lectures and special investigations. Three times a week.

PROFESSOR KNIGHT.

(Given biennially. Offered in 1900-1901.)

72. *Topical Research in American History.* The preparation of special topics on the basis of the work of Course 71. Some special period of American History will be taken up each year. Once a week.

DR. SANBORN.

Open to those who have had Course 71. All students electing their major study in the department of American History and Political Science are expected to take this course in their third year.

74. *Territorial Development of the United States, 1850-1900.* A continuation of Course 73. Particular attention will be paid to the country west of the Mississippi, and to the growth of American interests in the Pacific. Lectures and assigned readings. Twice a week.

DR. SANBORN.

POLITICAL SCIENCE.

Professor Knight.

(All courses in Political Science must be preceded by History 55 or 56.)

FIRST SEMESTER.

51. *International Law.* Text-book and lectures. A study of public international law. Lawrence's *Principles of International Law*. Twice a week.

PROFESSOR KNIGHT.

(Given biennially. Not open in 1900-1901.)

53. *Political Institutions of the United States.* Lectures, recitations and special reports. A study of the origin, nature and workings of the political institutions of the United States, and an analysis of the form and powers of the government. Bryce's *American Commonwealth*. Three times a week.

PROFESSOR KNIGHT.

55. *Government of Dependencies.* A study of the political institutions and organization of the leading colonial governments of the present time, together with an examination of their political relations to the home governments. Lectures, assigned readings and special reports. Twice a week.

PROFESSOR KNIGHT.

(Given biennially. Offered in 1900-1901.)

SECOND SEMESTER.

52. *Municipal Government.* Lectures, collateral reading and special reports. A study of the development and status of modern municipalities, and a comparative study of recent American municipal charters. Twice a week.

PROFESSOR KNIGHT.

This Course forms a good sequent to Political Science 55, but is not dependent upon it.

54. *Comparative Political Institutions of Europe and America.* Lectures, collateral readings and special reports. A comparative study of the political institutions and governmental forms and powers in the United States, England, Germany, France and Switzerland. Three times a week. Course 54 must be preceded by Course 53.

PROFESSOR KNIGHT.

56. *History of Treaties and Diplomacy.* A study of the leading treaties of modern times with special reference to their influence upon international law and upon the status and international relations of the leading modern states. Lectures and assigned readings. Twice a week.

PROFESSOR KNIGHT.

This Course is the natural sequent of Course 51, and must be preceded by that Course. It should also be preceded by at least one Course in modern European history, though this is not at present required. (Given biennially. Not offered in 1900-1901.)

ANATOMY

(See Human Anatomy.)

ANCIENT ART

(See Greek Language and Literature.)

ASTRONOMY.

[THE EMERSON McMILLIN OBSERVATORY.]

Associate Professor H. C. Lord, Director of the Observatory.

Mr. J. Warren Smith, Lecturer on Meteorology.

61, 62. *General Astronomy.* Lectures and recitations twice a week throughout the year.

63, 64. *Astronomy and Geodesy.* Lectures on practical Astronomy, supplemented by practice with the instruments of the Emerson McMillin Observatory. Open to students who have had the Calculus. Text-book, Doolittle. Three times a week throughout the year.

55, 56. *Theoretical Astronomy.* Lectures and Observatory practice. The theory of the undisturbed motion of a planet or comet and the calculation of ephemerides. Parabolic orbits from three complete observations. Orbits from three complete observations, including the eccentricity. Work in the Observatory with the twelve-inch equatorial. Definite orbits. Observatory work continued. Authorities: Watson, Klinkerfeus, Appolzer, and the astronomical journals. Five times a week through the year.

57, 58. *Astro-Physics.* Lectures on the theory of the Spectroscope and its use in Astronomy, supplemented by practice with the large spectroscope of the Observatory. Five times a week through the year.

Astronomy 55, 56, 57 and 58 are open only to students who have had Calculus.

60. *Meteorology.* Twice a week. Second half, second semester. Same as 3.

3. *Meteorology.* Lectures on practical meteorology, {supplemented by laboratory work in map and chart making, and regular observations with the instruments in use by Weather Bureau. Text-book, Davis, with the daily weather maps issued by the Bureau. Twice a week, third term.

BOTANY.

[BOTANICAL HALL.]

Professor Kellerman, Assistant Professor Schaffner, Mr. Collett, Miss Dufour.

FIRST SEMESTER.

51. *Ecology and Physiology.* Lectures and recitations twice a week; laboratory work once a week; credit three hours. Coulter's Plant Relations.

57. *Laboratory Work.* Fungi, Algæ, Bryophyta. Two or three times a week.

59. *Advanced Laboratory Work in Histology and Physiology.* Five times a week. Open to students who have taken Course 51, or 57.

61. *Systematic Botany, Phenogamic and Cryptogamic.* Three to five times a week. Open to students who have taken Course 51, or 57.

63. *Monographic Work.* Graduate Course. Credit five or ten hours.

65. *Research Work in Morphology and Physiology.* Graduate Course. Credit five or ten hours.

SECOND SEMESTER.

52. *Morphology and Classification.* Lectures and recitations twice a week; laboratory work once a week; credit three hours. Coulter's Plant Structures.

58. Continuation of Course 57. Pteridophyta, Gymnospermæ, Angiospermæ. Two or three times a week.

60. Continuation of Course 59. Five times a week.

62. Continuation of Course 61. Three to five times a week.

64. Continuation of Course 63. Credit five or ten hours.

66. Continuation of Course 65. Credit five or ten hours.

For Summer Courses in Botany, see Lake Laboratory.

CHEMISTRY.

[CHEMICAL HALL, ROOMS 24, 25, 14, 21, 22, 7, 18.]

Professor McPherson, Emeritus Professor Norton, Assistant Professor Henderson, Mr. Kohr, Mr. Gore.

The Department of Chemistry occupies the larger portion of the Chemical Hall. The main lecture room is situated on the second floor and has a seating capacity of one hundred and seventy-five persons. There are four main laboratories; one for students in elementary chemistry and qualitative analysis, accommodating two hundred and seventy-five; one for quantitative analysis, with desks for fifty; one for advanced qualitative and sanitary analysis, and one for organic chemistry, each

with accommodations for twenty. In addition to these, there is an office, three private laboratories and several smaller rooms used for combustion work, spectroscopic work and private investigation.

These laboratories are equipped with all the modern appliances as water, gas, steam ovens, drying ovens, automatic air blasts, electric lights, etc. Distilled water is piped from the large still in the attic to the several rooms.

Each student has his own desk with drawers and locker. All supplies are obtained from the chemical store room, which is liberally furnished with all the apparatus and material necessary for chemical investigation.

The Department is also well equipped with all apparatus necessary for experimentally illustrating the class room work. The main lecture room is furnished with cases which contain a large collection of specimens for purposes of illustration.

FIRST SEMESTER.

51. *Elementary Chemistry*. Arranged for students who have little or no knowledge of Chemistry. Three sub-divisions; one lecture, one quiz, and three hours' laboratory practice weekly. In the laboratory the student performs an extended series of experiments illustrating the principles of Chemistry. Three hours credit.

53. *Qualitative Analysis*. Laboratory, lectures and quiz. Students familiarize themselves with the properties of the elements with a view to their detection, and then apply this knowledge to the analysis of unknown substances. Three to five times a week. This course must be preceded by Courses 51 and 52.

55. *Quantitative Analysis*. Laboratory, lectures and recitations. Use of the balance and general principles of gravimetric analysis. Drill in the solution of problems in quantitative analysis; study of properties of precipitates; principles of volumetric analysis. Selections are made from such analytical methods as best meet the needs of the student. The samples used for analysis are mixtures or commercial products, the percentage composition of which is not made known to the student until he has reported his own results. Three to five times a week. This course must be accompanied by Course 69.

57. *Organic Chemistry*. Laboratory, lectures and recitations. Open only to students who are familiar with at least the principles of quantitative analysis. Five times a week.

59. *Advanced Chemistry*. Laboratory. Arranged for special students who have had Courses 53, 54, 55, 56, 57; also Course 58 for stu-

dents in Organic Chemistry. Students are allowed to select such work as they are capable of undertaking—as, the critical examination of analytical methods as well as the study of new methods. Five times a week.

61 a. *Inorganic Preparation*. Laboratory and lectures. This course includes the preparation of inorganic substances from the crude materials. Special attention is given to the preparation of chemically pure compounds, to be used in certain quantitative processes. Thorpe's textbook on inorganic preparations is used, and reference is made to Bender and Erdmans' *Anorganische Präparate* and Krauche's *Prüfung Chemischer Reagentien*. This course must be preceded by quantitative analysis. Four times a week until the Christmas Recess.

Students electing this course must follow with historical chemistry and sanitary analysis.

61 c. *Historical Chemistry*. Lectures and recitations. A course of twelve weeks beginning after the Christmas Recess. Four times a week. Given biennially, offered in 1900-1901.

63. *Chemical Seminary*. Special students will meet to discuss special topics and reviews of current literature. Once a week.

65. *Electrolytic Analysis*. Laboratory. Extended practice is given in quantitative electrolytic analysis. Twice a week.

69. *Advanced General Chemistry; Physical Chemistry*. This course includes (a) a general survey of inorganic chemistry based upon the arrangement of the elements in accordance with the Periodic Law and (b) a discussion of the main principles of physical chemistry and their application to general chemical processes. Twice a week.

SECOND SEMESTER.

52. Continuation of Course 51. Three hours credit.

54. Continuation of Course 53, including use of Spectroscope.

56. *Quantitative Analysis*. Continuation of Course 55. Three to five times a week. This course must be accompanied by Course 70.

58. *Organic Chemistry*. Laboratory and lectures. Continuation of Course 57. Arranged for students who wish to specialize in organic chemistry. The course includes further preparation of typical organic compounds, their purification and analysis. Five times a week.

60. Continuation of Course 59.

64. Continuation of Course 63.

66. Repetition of Course 55.

68. *Sanitary Analysis*. Laboratory and lectures. A study of the most important chemical methods for the analysis of water and air.

This course must be preceded by quantitative analysis, and at least the equivalent of Course 61 in Anatomy and Physiology (bacteriology). The course extends over the last ten weeks of the second semester. Four times a week.

70. Continuation of Course 69.

Students who can elect but one year of Analytical Chemistry, will take Courses 53 and 66. Others will take 53 and 54, then follow with 55, 56 and 57.

ECONOMICS AND SOCIOLOGY.

[UNIVERSITY HALL, ROOMS 17 AND 18.]

Associate Professor Clark.

This department aims to give instruction in both the theory and practice of the industrial and social life of man. The pedagogical motive is both to train and to furnish the mind.

The student is first taught the fundamental principles of the science, to reason, to observe, and to accurately judge industrial phenomena, and then to formulate the results into scientific knowledge. Courses 51 and 52 (same as 51) undertake this work.

The next step is to study and discuss by means of lectures and required readings some of the most important present-day problems. An historical study is first made; then follows a critical analysis; and finally the working of the economic principles involved is shown. Courses 53, 54, 55, 56, 57, 58, 59, cover this field.

The third step is to throw the student mainly upon his own resources by the assignment of tasks in practical work, in making investigations, in preparing papers, reports, etc. Courses 61, 62, 63, 64, 65, 66, are offered with this in view.

Thus the work falls in three groups: Elementary group, Problem group and Seminary group.

In addition to the above, but without University credit, lectures are arranged to be given by professional and practical business men in the interest of commerce and business; and class excursions to various industrial institutions are undertaken for purposes of study. See Special Announcements.

By observing the arrangement of the courses and the year offered the student will be able, easily, by giving a fair proportion of time, to cover all the work in three years. See Scheme given below.

FIRST SEMESTER.

51. *Elements of Political Economy.* A careful study of the laws of production, exchange, distribution, and consumption of wealth;

combined with an analysis of the industrial actions of men as regards land, labor, capital, money, credit, rent, interest, wages, etc. Text-book, lectures, individual investigations and themes. Four times a week. This course is repeated in the Second Semester (as Course 52). Of students who are required to take the subject, those whose names begin with the letters L to Z will take it in the First Semester; others will take it in the Second Semester (as Course 52).

53. *The History of Industrial Society.* A general view of the evolution of industrial society; involving a study of the Manorial and Guild Systems; of the rise of class interest; the formation of trading companies; land-holding; the development of capitalistic enterprise and the economic legislation and theories that grew out of these conditions; with special reference to England and America. Syllabus, lectures and assigned readings. Twice a week. This course logically precedes Course 60.

55. *Practical Problems in Economics.* A rapid study of immigration, money, railroads, crises and tariff. Lectures and collateral readings. Twice a week. The problems mentioned are subject to change from year to year.

57. *The Transportation Problem.* A study of the development and present economic status of roads, canals and railroads in their relation to industry and to the state. Lectures. Twice a week.

59. *Public Finance and Taxation.* This course aims to make the student acquainted with the theory of public revenue and expenditure; and with the leading systems of financial administration throughout the world. Municipal indebtedness and corporate financing are incidentally treated. Text book: Adams' Finance; with supplementary lectures. Twice a week.

61. *Seminary in Economics.* This course is designed to train students in original investigation and research. Students will be required to conduct the discussion on theoretical and practical lines and defend theses. Current Economic Legislation and Literature constitute a feature of the work. Two hours a week at one meeting. All students who elect their Major Study in Economics must take this course in their fourth year. Open, as elective, to other students, graduate and advanced under-graduate, on permission of the instructor.

63. *Sociology and Statistics.* This course will introduce the student to the general laws and principles underlying the formation of society. Investigation in statistics of population or in lines con-

nected with the student's work in other courses may be carried on. Special training in statistics will be given in this course. Two laboratory hours are equivalent to one lecture hour. Lectures and laboratory work. One hour credit. May be taken separately or accompany Courses 55, 57, 59 or 65.

65. *Commercial Geography*. A scientific study of business relations and conditions, domestic and foreign; the sources, quantity and quality of products, and the distribution of the same, etc. Consular reports will constitute one basis of study. Text: Chisholm's *Commercial Geography with Atlas*; supplementary lectures and reports from students on assigned topics. The course is especially designed for those pursuing the Four Year Course in Commerce and Administration, and should precede Course 66. Twice a week.

SECOND SEMESTER.

52. *Elements of Political Economy*. Text book, lectures, individual investigations and themes. Four times a week. (This is a repetition of Course 51, and will be taken in the Second Semester by those students, of whom it is required, whose names begin with the letters from A to K.)

54. *The History and Theory of Socialism*. A complete study of the subject in its historical, economic and critical aspects. The socio-economic doctrines of the philosophers, the Utopias of Plato, More, Campanella, Cabot, etc., and the theses of the various German, French and English schools of socialists, will be treated. The origin of private property, the right to labor, rights of industrial classes and the fundamental principles of industrial society will be analyzed. Syllabus, lectures and collateral readings. Twice a week.

56. *Industrial and Social Reforms*. A study of labor problems, charities and corrections, monopolies and trusts, insurance, savings associations, etc. Open to those who have had Course 51. Lectures and collateral readings. Twice a week.

58. *Money, Credit and Banking*. This course involves the history and theory of the subject; a comparative study of monetary systems, currency, etc., together with the various methods of banking; national banks; clearing house system, etc.; with a critical analysis of proposals for reform. Texts, lectures and collateral readings. Twice a week.

60. *Industrial and Financial History of the United States*. A complete survey of American industries, financial resources and policies;

a study of public lands, government subsidies, internal revenue, etc. Open to those who have had Course 51. Lectures. Twice a week.

62. *Seminary in Economics.* Two hours a week at one meeting. This is a continuation of Course 61, and is open only to those who have had that course. All students who elect their Major Study in Economics must take this course in their fourth year. Open, as elective, to other students, graduate and advanced under-graduate, on permission of the instructor.

64. *Sociology and Statistics.* A continuance of Course 63. One hour credit. May be taken separately or accompany Courses 56, 58, 60 or 66.

66. *Commerce and Trade.* The purpose of this course is to give the student a practical knowledge of the subjects treated; to teach business methods, principles and ethics. Blank forms used in business, commercial paper, stocks and bonds and other forms of securities will be studied with the aid of sample copies. This is an advanced course and should be preceded by four elective courses in the department, including Course 60. Required readings and reports on current commercial and financial literature. Lectures. Twice a week.

Students desiring to specialize along the line of Economics and Sociology will find it to their advantage to choose their work according to the following scheme of cumulative electives:

	Second Year	Third Year	Fourth Year
1st Semester....	51	53, 55, 57, 63, 65	59, 61, 63, 65
2d Semester....	52, 56, 60	54, 56, 60, 64, 66	58, 62, 64, 66

EDUCATION.

[UNIVERSITY HALL, ROOMS 51 AND 54.]

Professor Gordy. Mr. Hamilton.

The fundamental aim of this Department is to rationalize the work of education; to give to intending teachers definite ideas of the purpose of education and intelligent opinions as to the methods by which this purpose may be attained. No matter what phase of the subject is studied, whether the history, science or philosophy of education, whether educational psychology or child study, this primary purpose is never lost sight of—to get from the subject of study clearer ideas as to the purpose of education, and clearer ideas as to the methods by which this purpose can be most successfully realized.

In all the work of the Department the effort is made to impress students with the idea that the business of education cannot be successfully done without the active and intelligent cooperation of the

entire community; to make them realize that fine school houses, generous school funds, abundant apparatus, excellent libraries, and even good teachers, are not sufficient guarantees that the work of education will be properly done, that unless the education of the home is in harmony with sound pedagogical ideas, unless the school is supported by a public opinion whose leaders realize both the difficulty and the transcendent importance of education, the results of the school must be comparatively meager.

But in the effort to help intending teachers take a rational attitude towards the work of education, and to help students of all classes feel that education is an interest as wide as human life, the aim of the Department is to omit no opportunity to widen the intellectual horizon of the student, sharpen his powers of discrimination, and deepen his interest in all that relates to man's well-being.

FIRST SEMESTER.

51. *Elementary Educational Psychology.* This course is intended to be helpful to three classes of students: (1) Those who are not preparing to teach, but who wish to make some study of education in order that they may perform their duties as members of society more intelligently; (2) Those intending to teach and who wish to study the relations between psychology and education; and (3) Those preparing to be superintendents and who wish to get suggestions as to the best method of teaching psychology to teachers. The text used is Gordy's *Psychology*. Students will be required to do collateral reading and bring in reports of their work. Four hours a week. PROFESSOR GORDY.

53. *History of Greek Education.* Students of this course will make a study of the history of the education of the Greeks from the time when life was their only school to the time when Greece became the teacher of the world. The connection between Greek life and Greek education will be sharply emphasized; the defects of Greek ideals of life will be shown as reappearing in Greek ideals and methods of education, and these in turn as exerting an influence on Greek life. This course will be essentially a study of Greek civilization, but with the practical purpose of getting light for the solution of our own problems. It is believed that the course will be especially helpful to those preparing to teach history, and the classics. The texts used are Davidson's *Greek Education*, and Davidson's *Aristotle*. Readings are required of students in Greek history and Plato's *Dialogues*. Four hours a week. PROFESSOR GORDY.

55. *The Herbartian Pedagogy.* The object of this course is three-fold: (1) To ascertain what the Herbartian Pedagogy is; (2) To determine its truth, and (3) To consider carefully its applicability—so far as it is true—to the schools of this country. Special attention will be given to those Herbartian theories that are most widely current in this country. The texts used are Herbart's Science of Education, De Garmo's Herbart and Lange's Apperception. Four hours a week. PROFESSOR GORDY.

59. *Child Study.* An elementary course in the psychology of child-life, giving special attention to the pedagogical aspects of the subject. Though arranged primarily for teachers this course treats of subjects of universal interest, such as the child as a social factor, function of play, the child and self-government, the child and the race, etc. Open to all students. Two hours a week. MR. HAMILTON.

67. *Educational Values.* This course seeks to determine the capacity of the various subjects in elementary and secondary education to contribute to true educational ideals. Two hours a week. PROFESSOR GORDY.

69. *A Study of Scientific Method.* This course is intended especially for those preparing to teach science. Two hours a week. PROFESSOR GORDY.

71 *Pedagogical Research.* For teachers and advanced students. Various school problems will be taken up for exhaustive study, thus offering opportunity for an insight into the organization of the school not usually open to undergraduate students. The work will be by topics and largely individual. Special facilities for original investigation, including the equipment of the psychological laboratory, will be at the command of students showing themselves competent to do such work. Some of the studies for '99 were interest, fatigue and the school program, the correlation of growth and development in the course of study, etc. As only a small number of students can be accommodated, applications for admission should be made as soon as possible. Two hours a week. MR. HAMILTON.

73. *Modern Educational System of Europe.* A brief historical and statistical study of secondary education in Germany, France and England. The work will be based upon such books as Russel's German Higher Schools, Holman's English National Education and will consist of recitations and special reports upon assigned topics. Though a reading knowledge of French and German is not a necessity, yet it will be of great advantage to students taking this course. Open to all students. Two hours a week. MR. HAMILTON.

SECOND SEMESTER.

52. *Modern Educational Theories.* These theories will be studied from three points of view: (1) As the expression of a certain philosophy of life; (2) from the point of view of their consistency, and (3) from that of their truth. The work is based on Quick's Educational Reformers. Four hours a week. PROFESSOR GORDY.

54. *Plato's Republic.* This course is essentially seminary work for the benefit of those students of Course 53, who wish to make a critical study of Plato's Philosophy of Education. Two hours a week. PROFESSOR GORDY.

56. *The Kindergarten.* This course is intended especially for those who are preparing to do kindergarten and primary work, and to be superintendents of schools. The work is based on Frobel's Education of Man, and Miss Blow's Symbolic Education. Two hours a week. PROFESSOR GORDY.

58. *The Philosophy of Education.* This course aims to make a systematic exposition of the philosophy of education. Four hours a week. PROFESSOR GORDY.

60. *Education in the United States.* This is a continuation of Course 73, being a comparative study of secondary education in this country and the European countries previously studied. The evolution of the secondary school, its relation to elementary and higher education, and the present status of secondary education in Ohio, will be the chief topics. Two hours a week. MR. HAMILTON.

68. *Educational Values.* A continuation of 67. Two hours a week. PROFESSOR GORDY.

70. *A Study of Scientific Method.* A continuation of 69. Two hours a week. PROFESSOR GORDY.

72. *Pedagogical Research.* A continuation of 71. Open only to students having taken Courses 71, 59, or their equivalents. Two hours a week. MR. HAMILTON.

ENGLISH LITERATURE.

[UNIVERSITY HALL, ROOM 31.]

Professor Barrows, Assistant Professor Taylor.

All Courses except 51 and 52 are elective; but no elective is open to one who has not taken, or is not taking 51 or 52. Students, whose major study is in English literature must take 69 and 70, in either the third or fourth year. Biennial courses will alternate as follows: 53 with 61, 54 with 60, 63 with 71, 64 with 72.

FIRST SEMESTER.

51. *An Introduction to English Literature.* Four times a week.

Required in the Course in Arts, the Latin Course in Philosophy, and the Course preparatory to the study of Law and Journalism.

Course 51 includes (1) an outline of the history of English literature. For this part of the work Pancoast's "Introduction to English Literature" is covered in three examinations. (2) Lectures on the elements of literary analysis and interpretation. (3) Study of selections characteristic of different authors and of different periods, to secure acquaintance with literary problems, to cultivate perception of literary qualities, and to verify and apply the assertions of the lectures and of the manual. This part of the work will occupy most of the time in the recitation room. The book first used is Palgrave's "Golden Treasury."

53. *Poetry from Spenser to Milton, exclusive of the drama.* Twice a week. (Omitted in 1899-1900.) Historical and critical lectures; papers and discussions. Required books: "Spenser's Faery Queene" (Kitchin); "Elizabethan Lyrics" (Schilling); "Milton's Poetical Works."

55a. *The English Bible: The Pentateuch.* Once a week. Given in 1901-'02.

55b. *The English Bible: The Histories.* Once a week. Given in 1899-1900.

55c. *The English Bible: The Gospels.* Once a week. Given in 1900-'01.

The study of the Bible is continued through three years. The old authorized version is the text-book; but students must also have, for correction and comment, the revised version.

57. *Shakspeare.* Three times a week. Literary study of Shakspeare's plays, with no more reference to historical and philological matters than is necessary to an understanding of the text. Various problems of dramatic art are discussed in connection with the plays that best illustrate them.

59. *The Modern Novel.* Three times a week. (Omitted in 1900-1901.) Lectures, readings and reports.

61. *From Dryden to Johnson.* Twice a week. (Omitted in 1900-1901.) Lectures, readings and reports. Both prose and poetry will be reviewed in this course.

63. *Prose from Cowper to the Victorian Period.* Three times a week. (Omitted in 1899-1900.) Lectures on the history of thought in

this period, on the relations of authors to each other and to the times, and on their literary significance. Critical study of selections from Burke, Coleridge, Landor and the essayists.

65. *Masterpieces: A Study of Literary Types*. Three times a week. This with course 66 constitutes one continuous course. The course covers the whole field of English Literature topically. It is designed for graduates, but is open to undergraduates who have taken two elective courses in this department. The study is of literary types, their origin and development, the best examples in English being chosen for basis: the types will include the drama, the epic, the idyll, the lyric, and in prose the novel, the short story and the essay. The whole will be based upon Aristotle's "Poetics" and the theory of ideal literature; and will include lectures, readings and essays.

67. *Chaucer*. Twice a week. The Prologue to the Canterbury Tales, and the most important of the tales will be read. The Morris-Skeat edition of the Prologue, and Skeat's edition of Chaucer's Works are required.

69. *Literary Problems*. Twice a week. A series of topical studies. Lectures and illustrative readings drawn from the entire range of our literature; reports and discussions.

Required in the third or fourth year of students whose major study lies in this department.

71. *Victorian Literature—Prose*. Three times a week. (Omitted in 1900-'01.) Victorian prose, centering on the essayists,—Ruskin, Newman, Arnold, Pater, Stevenson. Lectures, readings and reports.

SECOND SEMESTER.

52. *An Introduction to English Literature*. Four times a week.

Required in the Modern Language and English Courses in Philosophy and in the Course in Commerce and Administration. See description of Course 51, of which this is a repetition.

54. *Prose from Sidney to Milton*. Twice a week. (Omitted in 1899-1900.) Lectures on the intellectual life, and the political, religious, and social problems of the period as they affected its literature; papers and discussions. Required books: Bacon's "Essays and Advancement of Learning" (Selby); Browne's "Religio Medici" (Camelot Classics); Cowleys's "Essays" (Cassel's National Library); Fuller's "Wit and Wisdom" (R. T. S. Library). Sidney, Taylor and others will be investigated in the library.

56a. *The English Bible*: Course 55a continued. Given 1901-'02.

56b. *The English Bible*: The Psalms and Prophets. Once a week.
Given in 1899-1900.

56c. *The English Bible*: The Acts and Epistles. Once a week.
Given in 1900-1901.

The study of the Bible is continued through three years. The old authorized version is the text-book; but students must also have, for correction and comment, the revised version.

58. *The Drama from the Miracle Plays to the Closing of the Theatres*. Three times a week. Lectures on the Mysteries, the Moralities, the Interludes, the Rise of the Regular Drama, Shakspeare and his Predecessors, Contemporaries and Successors. Select plays will be read by the class.

60. *The Drama Since the Restoration*. Twice a week. (Omitted 1900-01.) Lectures, readings and reports.

62. *American Authors*. Three times a week. (Omitted 1900-1901.) Lectures, readings and reports.

64. *Poetry from Cowper to the Victorian Period*. Three times a week. (Omitted in 1899-1900.) Lectures on the rise of the romantic spirit, on the history of thought in this period, and on the relation of the poets to the times and to current problems. Study of selections from Cowper, Burns, Wordsworth, Shelley and Keats.

66. *Masterpieces*: A Study of Literary Types. Three times a week. Course 66 is a continuation of Course 65 and must be preceded by 65. See description of Course 65.

68. *The Great Translations*. Twice a week. (Omitted in 1899-1900.) This is a graduate course, for the discussion of various problems of universal literature, and the investigation of the indebtedness of English to other literatures. Undergraduates must obtain permission to take this course.

70. *Literary Problems*. Twice a week. A continuation of Course 69, and required of students whose major study lies in this department.

72. *Victorian Literature — Poetry*. Three times a week. (Omitted 1900-'01.)

EUROPEAN HISTORY.

[UNIVERSITY HALL, ROOMS 7, 17, 36.]

Associate Professor Siebert.

The courses of instruction in this department are divided into two groups: (1) the general courses in Continental and English History

(151 and 152, and 153 and 154, respectively); and (2) the advanced courses, dealing in a fuller way with special periods and phases of the subject.

The general courses are intended to meet the needs of three classes of students: (a) those desiring only a general knowledge of European History; (b) those looking forward to more advanced work in the department; and (c) those expecting to specialize in the line of American History, or to enter upon a legal or business career. For the third class Courses 153 and 154 are especially recommended.

The advanced courses are intended to acquaint those qualified to enter them with an intimate knowledge of the special period or subject concerned, to give the student a comprehensive acquaintance with the best authorities, and practice in the written and oral exposition of assigned topics. They are designed for students especially interested in European History, and for those preparing to teach.

Courses 151 and 152, in the order named, must precede all other courses in European History, except Courses 153, 154 and 157.

FIRST SEMESTER.

151. *General History of Europe to the Close of the Middle Ages.* Lectures, text-book and collateral readings. Adams, *Civilization during the Middle Ages*. Three times a week. Two sections.

153. *Political and Constitutional History of England to the Accession of the Stuarts.* Lectures, text-book and assigned readings. Gardiner's *Student's History of England*. Three times a week.

155. *History of Europe from 1769 to 1815.* The French Revolution. Lectures, recitations and collateral reading. Stephen's *Europe, 1718-1815*. Three times a week.

157. *Roman History and Institutions.* Lectures and text-book. Pelham, *History of Rome*. Twice a week.

159. *History of European Colonies.* A study of colonial development of Portugal, Spain, England, the Netherlands, France and Germany during the fifteenth, sixteenth and seventeenth centuries. Lectures, collateral readings and special reports. Twice a week.

Omitted in 1900-1901.

161. *History of France to the Middle of the Eighteenth Century.* Lectures, assigned readings and special reports. Given biennially. Omitted in 1900-1901.

SECOND SEMESTER.

152. *General History of Europe from the Middle Ages to the Present Time.* Lectures, text book and collateral reading. Schwill's *History of Modern Europe*. Three times a week. Two sections.

154. *Political and Constitutional History of England from the Accession of the Stuarts to the present time.* Lectures, text-book and assigned readings. Gardiner's *Student's History of England*. Three times a week.

156. *History of Europe since 1815.* Lectures, text-book and assigned readings. Fyffe's *Modern Europe*. Three times a week.

158. *Histroy of the Period of the Protestant Reformation.* Lectures and text-book. Hauser's *Era of the Reformation*. Twice a week.

160. *History of European Colonies.* History of colonization by the important States of Europe during the eighteenth and nineteenth centuries. Lectures, collateral reading and special reports. Twice a week. Omitted in 1900-1901.

162. *Documentary and Bibliographical Studies in European History.* Lectures, readings and criticism of documents, and investigations. Given biennially. Omitted in 1900-1901.

GEOLOGY.

[ORTON HALL, ROOMS 1, 5, 4, 7 AND 13.]

Associate Professor Prosser, Associate Professor Bownocker.

The geological department and museums are located in Orton Hall. At the right of the main entrance are the geological lecture room and professor's office, while the central and rear portions are occupied by the geological and palaeontological museum containing an excellent representation of the rocks from the principal formations of the State together with their animal and vegetable fossils. This includes a majority of the described fossils of the Ohio formations in which are numerous type specimens. The museum also contains a relief map of the State, a number of other models, and mounted skeletons of a Mastodon and a Megalonyx from Ohio.

The museum of economic geology located in the basement contains a good representation of the coals, petroleums, iron ores, clays and building stones of Ohio.

At the right on the second floor are the stratigraphical and petrographical laboratories and professor's office.

For the work in stratigraphy and paleontology there are in addition to the museum collections, first, a special collection of the

Ohio rocks and fossils for the laboratory and second, the Prosser collection of Paleozoic rocks and fossils from the typical localities of New York and the Appalachians, together with a collection of rocks and fossils from the Carboniferous, Permian and Cretaceous systems of Kansas and Nebraska. In the advanced work, special attention is given to fitting students for teachers of geology or for investigation and the professional work of a geologist.

For the work in Petrography there are three good microscopes and a machine for making thin sections. Among the rock collections are: Hawes' collection of New Hampshire rocks, the Kranz collection of rock specimens, the Lake Superior collection, the Williams collection from the vicinity of Baltimore and two collections furnished by the U. S. Geological Survey. Of thin sections there are the Voight & Hochgesang collections of minerals and rocks, and a large number of slides representing drift boulders from the vicinity of Columbus.

For the work in Physiography there is a good representation of maps, globes and models.

FIRST SEMESTER.

53. *Paleontology*. Careful training in systematic classification which may be used in the philosophical study of the development of plant and animal life, or as a means of becoming acquainted with the faunas and floras that characterize the various geological formations.

At first the student devotes some time to conchology, studying recent shells in which the characters used in classification are well preserved, and after this preliminary work, fossils are studied. Fossils afford the most reliable data for identifying and correlating geologic formations, and the critical study of faunas is a field especially adapted to independent research.

Laboratory, museum and field work. Two to five hours credit.

55. *Petrography 1*. Laboratory and Lectures. Optical crystallography, with practical determination of rock-forming minerals, macroscopically and microscopically. Study of the igneous rocks in the hand specimen and thin section. Twice a week. The Sturtz rock collection and Voight Hochgesang thin sections of typical minerals and rocks will be carefully studied. Books of reference: Mitchel Levy—*Les Minneaux des Roches*; Rosenbusch—*Mikroskopische Physiographie der Petrographisch Wichtigen Mineralien*, 3d ed.; *Mikroskopische Physiographie der Massigen Gesteine*, 2d ed.; Teall's *British Petrography*; Spottiswoode's *Polarization of Light*. Pre-requisites; Chemistry, 51 and 52; Metallurgy, 52 (Mineralogy and Crystallography).

59. *Field Geology*. Field and laboratory study of the geologic formations readily accessible from Columbus. This course is intended to

acquaint the student with the ordinary methods of field investigation, and involves the collection and identification of specimens, the measurement of geologic sections and the preparation of a report describing the region studied. Two to five hours credit.

61. *Cosmical Geology*. Lithological Geology, Dynamical and Structural Geology. Books of reference used in preparation of the work: Green's Physical Geology, Geike's Text-book of Geology, LeConte's Elements of Geology, Hunt's Chemical Geology, Daubree's Geologic Experimentale. Three times a week.

63. *Physiography*. Study of the features of the earth's surface with special reference to North America; the agencies producing these features and geographical changes now in progress. Recitations, lectures, map-work, field excursions. Books used in preparation of work: Standard Works on Physical Geography; Russell's Rivers of North America; Lakes of North America; and Glaciers of North America; Shaler's Aspect of the Earth; Wright's The Ice Age of North America; The National Geographic Magazine; Maps of the Mississippi River Commission, etc. Twice a week.

SECOND SEMESTER.

54. Continuation of Course 53. These two Courses may be continued through a second year.

56. Continuation of Course 55. Twice a week.

58. *Geographic Geology*. The origin, developement, and destruction of topographic forms. Rivers, lakes, oceans, ice, and winds as agents modifying the surface of the earth. The great ice age in North America. [Primarily for teachers.]

Books of references: Journal of Geology; American Geologist; The great Ice Age; (Geike's) The Ice Age in North America; (Wright) The Reports of the United States Geological Survey; The Maps of the Mississippi River Commission, etc. Three hours per week. Lectures, recitations, map work. Third term.

60. *Areal Geology*. Instruction in the methods of preparing geological maps and reports. The student compiles from a geological report a map with sections showing geologic structure, and later traces the outcrops and prepares a geological map of some region. Two to five hours credit.

62. *Historical Geology*. A general course in paleontological and stratigraphical geology with excursions and laboratory study of the Ohio Geological Reports and characteristic fossils. The development

of organisms and the classification and distribution of the geological formations are considered. Continuation of Course 61. Lectures and recitations three hours.

64. Continuation of Course 63. Twice a week.

GERMANIC LANGUAGES AND LITERATURES.

[UNIVERSITY HALL, ROOMS 30, 32, 38.]

Professor Eggers, Associate Professor Mesloh.

The Department of Germanic Languages and Literatures offers courses of instruction in German and some of its kindred languages; also courses in Comparative Grammar and Sanskrit.

The object of the elementary instruction in German is, primarily, to give to the student a good reading knowledge which may help him either in studying the masterpieces of German Literature, or in carrying on scientific researches in any specialty chosen by him.

While special attention is given in the elementary courses to the acquisition of a reading knowledge, considerable time is devoted to written and colloquial exercises. Even in the most elementary class a special arrangement is made to give students half an hour's drill every day in conversation. In the higher classes the work in composition is carried on in German exclusively; in other classes the German is used as far as possible. The main object of elementary instruction is, and always must be, a good reading knowledge, the substantial advantages of which may be utilized for the study of literature or the perusal of works from the pen of German scientists.

For the study of German Literature in all its phases a large number of courses have been arranged. Two new courses in German Drama and Prose will be offered in 1901. In the reading of scientific books special instruction is provided in Courses 53, 54 and 2.

The courses in Gothic, Old Norse, Old High German, etc., are intended chiefly to familiarize the student with the laws and development of language.

The above courses, in language, literature and linguistics will enable the student to specialize in any line of studies he may desire.

In addition to library facilities, which are fairly good as offered in the University library, the department can put a large number of maps, reference-books, commentaries, and especially a fine collection of illustrated works at the disposal of the students. The latter, as they depict scenes from history, literature and social life in Germany, help to produce a vivid picture of the milieu from which German literature has sprung.

51. *Elementary German, Grammar*: Thomas's Practical Grammar, Super's Elementary Reader. The object of this course is not only to lay a firm foundation in German, but also to form correct habits of language study. The student is led to build up his vocabulary as far as possible. His reasoning powers are constantly appealed to. Half an hour's conversational drill is given every morning before regular class hours. Attendance at this exercise is voluntary. Four hours a week.

53. *Science Reading*. The work of this course comprises a review of the essentials of grammar, the reading of Science German of a more general nature and work in composition. Open to those who have completed Courses 51 and 52, or their equivalents. Two or four hours a week.

55. *Intermediate German*. Review of the essentials of Grammar. Compositions with German as the language of the class room. Rapid reading of a number of modern novels. Considerable time given to reading at sight. This course is open to students who have finished Courses 51 and 52, or their equivalents. Four hours a week.

57. *German Drama*. The development of the German drama from earliest times to nineteenth century, with special attention to Lessing's, Schiller's and Goethe's dramas. Lectures and reading. Composition continued. Open to students who have finished 51, 52, 55, 56. This course will alternate after 1901 in successive years with 73. Three hours a week.

59. *Faust I*. Critical Study of Part 1. Can be taken only by those who propose also to take Faust II (60). Students who desire to take this course must secure approval of the professor in charge, and must have finished 51, 52, 55, 56, 57 and 58. Twice a week.

61. *Mediaeval Epics*. Nibelungenlied, Gudrun and Parzival are read either entire or in part in the original. Lectures. Open to students who have had 51, 52, 55, 56, 57, 58. Twice a week.

63. *Deutscher Aufsatz*. Original compositions in German. The entire work is carried on in German. This course is especially designed for advanced students and teachers. One hour a week.

65. *Colloquial Exercises*. For advanced students and teachers. The members of the class, in turn, will take charge of the class under the guidance and supervision of the professor. Two hours a week.

67. *Gothic*. Wright's Primer. This course is intended to lay a sound foundation for linguistic work. The relation between Gothic and allied languages is constantly considered. Two hours a week.

69. *Old Norse*. Moreen's Grammar. Some saga will be discussed from a literary as well as linguistic point of view. Courses 67 and 69 will be given in alternate years. Two hours a week.

71. *Sanskrit*. Elementary course. Perry's Primer with lectures introductory to the study of Indo-Germanic philology. Two hours a week.

73. *Modern German Drama*. Critical study of contemporary dramatists, Hauptmann, Sudermann and others, with references also to the dramas of Ibsen and other dramatists of Germanic countries. Lectures and reading. Composition. After 1901 this course will alternate with 57. Three hours a week.

75. *Phonetics*. Lectures. The course is intended to give the student a knowledge of the various sounds of language and of the relations between them. One hour a week.

SECOND SEMESTER.

52. *Elementary German*. Continuation of Course 51. Grammar completed. Several short stories are read. Reading at sight. Conversational exercises are continued. Four hours a week.

54. *Science Reading*. Continuation of Course 53. Each student reads German scientific works dealing with the subject in which he proposes to specialize. For this purpose the class is divided into sections. Two or four hours a week.

56. *German Literature*. Lectures upon the outline of German literature with special reference to German Lyrics and Ballads. Composition continued. This course must have been preceded by Courses 51, 52, 55 or their equivalents. Four hours a week.

58. *German Prose*. The history of the development of German prose from earliest times to nineteenth century with special attention to the prose of Luther, Lessing and Goethe. Lectures and reading. Composition continued. This course will alternate after 1901 with 74. Three hours a week.

60. *Faust II*. Two hours a week.

62. *Mediaeval Lyrics*. Lectures and reading. Special attention will be given to the poetry of Walther von der Vogelweide. Open to students who have had 51, 52, 55, 56, 57, 58. Twice a week.

64. *Deutsche Kulturgeschichte*. Lectures in German upon some period in the history of German civilization. Notes must be taken by students in German. This course is designed for advanced students and teachers. One hour a week.

66. *Colloquial Exercises*: For advanced students and teachers. Continuation of Course 65. Twice a week.

68. *Old High German*. Wright's Primer. Lectures. The course unites systematic linguistic drill in the archaic forms of the language with the study of the best literary monuments. Two hours a week.

70. *Comparative Grammar*. Meringer's *Indogermanische Sprachwissenschaft*, supplemented by lectures. Courses 68 and 70 will be given in alternate years. Two hours a week.

72. *Sanskrit*. Continuation of Course 71. Lanman's Reader. Two hours a week.

74. *Modern German Prose*. Lectures and reading. The great contemporary writers of prose in Germany will be discussed. Some of their critical and philosophical works will be read. References will be made to the great prosaists of other Germanic countries. This course will alternate after 1901 with 58. Three hours a week.

GREEK LANGUAGE AND LITERATURE.

[UNIVERSITY HALL, ROOM 37.]

Professor Smith, Associate Professor Hodgman.

The study of Greek is required of all candidates for the degree of Bachelor of Arts, and is open as an elective to all other students who are prepared to take it. The required work is arranged as four hours of the class-room work per week for two years. To meet the wishes of students who have completed the required work, advanced elective courses in Greek are offered, as far as the facilities of the department will permit. In the absence of a separate department of Art at the University, courses of lectures on the history of ancient and mediaeval art are offered in alternate years in the department of Greek. These courses, although only partially concerned with Greek Art, are maintained to meet what seems to be a genuine demand, in the hope and belief that they will lead to the establishment of a museum of art, with the proper lectureships attached.

Special attention is called to the following points:

1. The requirements for admission as outlined below, should be met by at least two years of high school work with five periods weekly, or its equivalent.

2. Students coming without knowledge of Greek and desiring to take it, may enter a special class of beginners, meeting for five hours a week through one year. This work receives no University credit; and only partially meets the requirements for admission.

Elementary Greek—White's First Greek Book, and one or two books of Xenophon's *Anabasis*. Designed to meet partially the wants of those who are deficient in the Greek required for admission. Does not receive University credit. Five times a week, through the year.

FIRST SEMESTER.

51. Xenophon's *Hellenica*, Books I, II (Manatt). Greek Prose Composition. Herodotus, Book VII. Four times a week.

53. Lysias, *Select Orations* (Morgan). Attic Antiquities. Homer's *Iliad* (Seymour). Four times a week.

59. Lectures on History of Ancient Art. Twice a week.
(Given biennially. Not offered in 1900-1901.)

61. The Attic Drama; lectures, collateral readings and quiz. Twice a week.

63. Lectures on the History of Mediaeval and Modern Art. Twice a week.
(Given biennially. Not offered in 1901-1902.)

65. Lyric Poetry. Selections from the Greek Lyric Poets. Twice a week.

SECOND SEMESTER

52. Herodotus (continued). Myers's History of Greece. Homer's *Odyssey* (Perrin). Four times a week.

54. Homer's *Iliad* (continued). Plato's *Apology of Socrates, Crito*, and selections from *Phaedo*. Four times a week.

60. Lectures on History of Ancient Art. Continuation of Course 59. Twice a week.
(Given biennially. Not offered in 1900-1901.)

62. The Attic Drama. Continuation of Course 61. Rapid reading of two or three plays. Twice a week.

64. Lectures on Mediaeval and Modern Art. Continuation of Course 63. Twice a week.
(Given biennially. Not offered in 1901-1902.)

66. Greek Private Life. Lectures, illustrated by photographs and lantern-slides. Twice a week.

CLASSICAL PHILOLOGY.

Courses 69-70. **Historical Grammar.** These courses include lectures upon such topics as: The Indo-European family of languages; alphabets and pronunciation of Greek and Latin; accent and its effects as seen in vowel weakening, syncopation, etc.; vowel graduation; inflection of noun and verb; Grimm's Law and the associated laws; the passage of Latin into French and thence into English, etc. The courses include, also, the study of selected inscriptions, of a portion of Quintilian, Book I, and assigned reading in such manuals as Giles's *Comparative Philology*, and Thompson's *Palæography*. Twice a week through two semesters.

(Given biennially. Not offered in 1901-1902.)

HISTORY.

SEE AMERICAN HISTORY AND EUROPEAN HISTORY.

HUMAN ANATOMY AND PHYSIOLOGY.

[BIOLOGICAL HALL, ROOMS 12 AND 20.]

Professor Bleile, Assistant Professor Morrey, Mr. Dresbach.

The method of instruction pursued in all of the courses offered in this Department includes lectures, quizzes and laboratory work, the amount of the latter depending upon the specific course taken. The rooms provided for the work are commodious and the equipment includes skeletons, charts, Auzoux and other models, microscopes, physiological apparatus and the various pieces needed in bacteriological work. Facilities are at hand for advanced work along certain lines in physiology, histology and bacteriology.

FIRST SEMESTER.

51. *Human Anatomy and Physiology.* Three times a week. This course to be preceded by, or accompanied with, a course in chemistry. Text-books: Martin's "Human Body" (advanced course), or Kirke's "Human Physiology." In this course more stress is laid on physiology, so much of anatomy only being taught as is essential for the comprehension of the workings of the body. The lectures are illustrated by frequent demonstrations, and a limited amount of laboratory work is introduced.

53. *Physiological Laboratory.* Three periods a week.

55. *Physiological Laboratory.* Five periods a week. In these courses some latitude is allowed the student in the work to be chosen and this may be along the line of more physiology, anatomy, histology or chemical physiology.

57. *Bacteriology*. One lecture, one laboratory period a week. This Course is offered for beginners in this subject.

59. *Histology and Histo-Chemistry*. Two lectures, three laboratory periods a week. Text-books: Stohr, "Text-book of Histology," Halliburton, "Essentials of Chemical Physiology." Must be preceded by or accompanied with Course 51 or its equivalent. In addition to a microscopic study of the tissues and organs, instruction is given in the preparation and mounting of these structures and the latter part of the course is taken up by laboratory work on the chemistry of fluids and organs of the body.

61. *Bacteriology*. One lecture, two laboratory periods a week. This Course is offered for advanced students and may include work along special lines.

SECOND SEMESTER.

52. Continuation of Course 51. Three times a week.

54. Continuation of Course 53. Three laboratory periods a week.

56. Continuation of Course 55. Five laboratory periods a week.

58. *Microscopy*. One lecture, one laboratory period a week. In this Course the theory of the microscope and its uses are discussed and the general methods for preparation of microscopical objects are taught and practiced in the laboratory.

60. Continuation of Course 59. Five laboratory periods a week.

62. Same as Course 61.

LATIN.

[UNIVERSITY HALL, ROOMS 29 AND 39.]

Professor Derby, Associate Professor Hodgman.

Courses 51, 52, 53 and 54 are required of all students who are candidates for the degree of B. A., or the degree of B. Ph. (Latin), and, in the order named, must precede all elective work in Latin.

FIRST SEMESTER.

51. Livy, either Books I and II, or Books XXI and XXII; Terence, *Phormio*. Exercises in retranslation. Special attention is paid to forms, syntax and prosody. Four times a week.

53. Horace, *Odes, Satires, Epistles*; Tacitus, *Agricola*. Four times a week.

ELECTIVE COURSES.

55. Roman Historians: Tacitus, *Historial*; Suetonius. Three times a week.

57. □ Roman Philosophy: Lucretius, Cicero and Seneca. Three times a week.

59. (College of Pharmacy.) Pharmaceutical Latin. Five times a week.

61. Lectures on Historical Grammar. Reading of selected inscriptions, and of a portion of Quintilian, Book I. Collateral reading on topics in Comparative Philology and Palaeography. Twice a week. (To be given in 1900-1901.)

63. Teachers' Course. Latin Prose Composition; Assigned Topics. Twice a week.

65. Roman Rhetoric and Oratory. *Ad Herennium*; Tacitus, *Dialogus*; Quintilian (Selections). Three times a week. (To be given in 1900-1901.)

67. Roman Private Life. Lectures with illustrations by lantern slides, and collateral reading. Twice a week.

69. Cicero's Philosophy: *Tusculanae Disputationes*, *De Finibus*. Three times a week. (To be given in 1900-1901.)

SECOND SEMESTER.

52. Plautus, *Mostellaria*; Cicero, Selected Letters. Four times a week.

54. Pliny, Selected Letters; Juvenal. Four times a week.

ELECTIVES.

56. Catullus, Tibullus, Propertius, Martial (Selections). Three times a week.

58. Ovid (Selections); Lucan, *Pharsalia*, Books I and VII. Three times a week.

60. Continuation of Course 59. Five times a week.

62. Continuation of Course 61. Twice a week.

64. Continuation of Course 63. Twice a week.

66. Late and Mediaeval Latin. Three times a week.

70. Seneca (Selections); Plautus (two plays). Three times a week.

THE LAKE LABORATORY.

The University maintains a lake laboratory during the summer vacation at Sandusky where it occupies a convenient building, the

former Hatchery building, 22x66 feet located by the city water works and close to the waters of the bay and convenient to good boarding places.

It has good facilities in the way of boats, tables, aquaria, collecting appliances, while microscopes, reagents, etc., are fully supplied from the home laboratory.

It offers for the coming season courses in botany and zoology outlined below, and also opportunities for special research in any branch of biology. The professors of the departments of Botany and Zoology and Entomology with their assistants will constitute the staff of instruction.

The courses will be open to students and teachers generally and students of the University may receive credit for courses equivalent to University courses.

Investigators engaged upon special problems relating to the fauna or flora of the region are given the privileges of the laboratory without charge but are expected to furnish their own microscopes or other special apparatus unless otherwise arranged. For the courses of instruction, a fee of twenty dollars will be charged which will cover all expense of instruction, laboratory supplies and use of boats and admit to two full courses of eight weeks beginning July 2nd.

COURSES IN ZOOLOGY.

(a) Laboratory and field courses including dissection of type forms, aquaria and field studies with instruction in collecting and preparing material for laboratory use and permanent collections. Special attention will be devoted to fishes and their food supply.

(b) Advanced courses in Invertebrate Morphology or Embryology.

(c) Special courses in Entomology or Ichthyology.

COURSES IN BOTANY.

(a) Laboratory and field courses including a study of type forms. The course will consist of collection trips in the field where the common species of each class are found, classification of familiar forms, study of structure and special parts of interest in connection with each group, with methods of preserving and mounting for immediate use or permanent preservation.

(b) General Botany consisting largely of Morphology and Ecology.

(c) Laboratory course; the work to be arranged.

For further information write for special circular on Lake Laboratory.

MATHEMATICS

[UNIVERSITY HALL. ROOMS 39, 41, 43, 45.]

Professor Bohannon, Associate Professor McCoard, Assistant Professor Arnold, Assistant Professor Swartzel, Miss Ball, Mr. Young.

In all four-year courses of this College, at least three hours of Mathematics a week (Courses 67, 68) are required in the first year. The subjects studied are College Algebra and Plane Trigonometry, in the main, with some little Analytical Geometry and Calculus, —in particular, the construction of curves illustrating economic statistics, with about as much Calculus as is found in Fisher's little book.

Students intending to make Mathematics a specialty should consult with the Professor very early in their course. They should take their first year Mathematics (55, 56) with the Engineering students, and, if necessary, have some of the required work of the second year postponed to a later year, so that at least five hours of Mathematics (Courses 59, 60) may be carried in the second year. Such students should also so select their course that a reading knowledge of French and German will be acquired during residence, with Italian also, if possible.

FIRST SEMESTER.

55. *Plane Trigonometry* (Loney) and 57, *Algebra* (Taylor). Five times a week.

59. *Analytics* (Loney, Venable) and 61, *Differential Calculus* (Edwards). Five times a week.

63. *Advanced Mathematics*. Topics will be changed from year to year to meet the wishes of the students. Selections may be made from the following courses: (a) Advanced Calculus (Picard, Houel); (b) Differential Equations (Johnson, Murray, Forsythe, Craig); (c) Higher Plane Curves (Salmon); (d) Advanced Analytical Geometry (Casey, Salmon); (e) Analytical Geometry of Three Dimensions (Chas. Smith, Frost, Salmon); (f) Theory of Equations (Burnside and Pantan); (g) Modern Higher Algebra (Chrystal, Salmon, Serret, Cole's, Netto); (h) Modern Geometry (Cremona, Reye, Steiner, Von Staudt, Charles); (i) Determinants (Muir); (j) Elliptic Functions (Weber, Halphen, Durege, Hermite, Greehill, Briot and Bouquet); (k) General Theory of Functions (Forsythe, Harkness and Morley, Tannery, Weierstrass, Durege, Thomae, Biermann); (l) Potential Function (Clausius, Riemann, Dirichlet, Peirce); (m) Mathematical Theory of Electricity (Mascart and Joubert); (n) Higher Geodesy (Clarke, Helmert, Jordan); (o)

Spherical Harmonics (Byerly, Ferrers, Heine); (p) Mathematical Optics; (q) History of Mathematics. Credit, one to ten hours.

65. *Problems on all Past Work.* Once a week.

67. *Algebra with a little Analytics and Calculus.* Three times a week. Taylor's *College Algebra*.

SECOND SEMESTER.

56. *Algebra* (Taylor), and 58, *Plane Analytics* (Loney). Five times a week.

60. *Calculus Differential Equations.* (Edwards.) Five times a week.

64. Continuation of Course 63. Credit, one to ten hours.

66. Continuation of Course 65. Once a week.

68. *Trigonometry with a little Analytics and Calculus.* Three times a week. Lyman and Goddard's *Trigonometry*.

MILITARY SCIENCE AND TACTICS.

[ARMORY.]

Major Burns.

1. *Military Drill.* Three times a week through the year.

2. *Tactics.* Lectures and recitations. Twice a week. Second term.

3. *Art of War.* Lectures and recitations. Twice a week. Second term.

PEDAGOGY

(See Education.)

PHILOSOPHY.

[UNIVERSITY HALL, ROOMS 33, 49, 50, 51.]

Professor Scott, Mr. Hamilton.

GENERAL STATEMENT.

The object in the required courses of this department is to give the students a clear elementary knowledge of the subjects, such as will be of immediate service as a means of discipline and culture and will enable them to pursue more intelligently the studies in the scientific, literary, and professional departments. At the same time they are designed to prepare those students who desire to continue the study of Philosophy for the more advanced lines of work provided in the elective courses. The course in Experimental Psychology is open to all who have completed a course in General Psychology. The elective work deals with the problems of Philosophy, either directly in the

Introduction to Philosophy and Metaphysics, or as they have been investigated and discussed by great philosophical thinkers.

The psychological laboratory occupies two rooms of the fourth floor of University Hall—a general laboratory and one for advanced work. A small dark room has been added for experiments in vision.

The collection of apparatus for demonstrating the general principles of Experimental and Physiological Psychology is quite complete. In addition, the laboratory contains excellent equipment for a few lines of research and advanced work, such as the study of vision in its psychological and aesthetic aspects, of motor ability, fatigue, etc., of time measurements, and of general organic conditions.

FIRST SEMESTER.

51. *General Psychology—Logic begun.* This course is required four times a week in the third year of the general courses which lead to the degrees of Bachelor of Arts, Bachelor of Philosophy in Latin, and Bachelor of Philosophy in Modern Languages. Psychology is studied till the Christmas vacation, after which Logic is begun. The subjects are developed by discussion, with the use of a text-book as a guide. The aim is to give the student a comprehensive view of the field, and to enable him by the use of his own powers of thought to obtain a clear understanding of the particular topics in hand and their mutual relations. The text-book used last year was "Stout's Manual of Psychology". Students are advised to read also James, Höffding, or Ladd. The text-book in Logic is "Creighton's Introductory Logic." PROFESSOR SCOTT.

53. *General Psychology.* This course is required in the second year of the general courses leading to the degrees of Bachelor of Philosophy in English and Bachelor of Science, and also in the course preparatory to Law and Journalism. It is given three times a week. The object is the same as that of Course 51. The text-book used is "Titchener's Outline of Psychology." MR. HAMILTON.

55. *Ethics.* This is a required course in the third year and follows Courses 53 and 54. It is given three times a week. The relations of Ethics to Psychology are pointed out and the conceptions peculiar to the science are critically examined. The nature and ground of right, the nature and authority of conscience, the nature and freedom of the will, the nature and ethical significance of desire, the various theories of the moral end, and the application of moral principles in the moral life, are the leading topics of discussion. PROFESSOR SCOTT.

57. *History of Ancient and Mediaeval Philosophy.* This is an elective course after Courses 51 and 52. It is given three times a week by lectures. "Zeller's Outlines of Greek Philosophy" is read. Special attention is paid to the development of thought and the relation of the successive thinkers to their predecessors. PROFESSOR SCOTT.

59. *Introduction to Philosophy.* This course is elective for students who have had Courses 51, 52, 56, 57, or 53, 54, 55, 56. But those who have not studied Courses 56 and 57 may take them in connection with Courses 59 and 60. It is given two hours a week. Accompanying or following the historical survey of philosophy in Courses 56 and 57, it proposes a logical survey of the subject, determining the contents, boundaries, and relations of its several departments, and investigating the conceptions and problems belonging to each. "Stuckenbers's Introduction to the Study of Philosophy" will be used as a basis for the work. Paulsen, Külpe and Ladd will be used for reference. PROFESSOR SCOTT.

61. *Physiological and Experimental Psychology.* Two hours a week. Lectures, assigned readings, and laboratory work. The course begins with a brief consideration of the interaction of mind and body, followed by an experimental study of the sense organs as factors in perception. An elementary knowledge of physics and biology or physiology is almost essential to this course. Open to all students passing in Courses 51 and 52 or 53 and 54, or their equivalents. MR. HAMILTON.

63. *The Study of Leading Works in Philosophy.* This course is elective for students who have had courses in Psychology, Logic and Ethics. It is given two hours a week. PROFESSOR SCOTT.

SECOND SEMESTER.

52. *Logic completed—Ethics.* This course follows Course 51 and is required four times a week. Deductive Logic is completed and some times is then given to Inductive Logic. Much practical work is assigned in both kinds that the student may become familiar with the application of definitions, rules, and principles.

Ethics is begun about the first of April and continued to the end of the year. A text-book is used, supplemented with lectures, discussions, and collateral reading. PROFESSOR SCOTT.

54. *Logic.* This course follows course 53 and is required of the same students three times a week. Jevons' Lessons in Logic has been used by the class, many examples being introduced to develop and test the student's knowledge. MR. HAMILTON.

56. *History of Modern Philosophy.* This subject is required after Course 55, and is elective after Courses 51 and 52. After a general survey of the field, Locke, Berkeley, Hume and Kant are made the subject of more thorough and extended study. The successive steps in the

great movement of thought achieved by these philosophers are carefully traced, the aim being to make clear the aspects of the problem as it is taken up by each of them and what each contributed towards its solution. Three times a week. PROFESSOR SCOTT.

60. *Metaphysics*. This Course succeeds Course 59, and is elective for two hours a week. Caird's *Metaphysics* and Bowne's *Metaphysics and Theory of Knowledge* will be used as texts, with collateral reading. The leading theories concerning the problem of reality will be examined, and the relations of *Metaphysics* to all knowledge and thought and to the several departments of science will be made leading objects of study. PROFESSOR SCOTT.

62. *Physiological and Experimental Psychology*. A continuation of Course 61. Two hours a week. In this course the students will be assigned special subjects for investigation. The work will consist of a review of the related literature, an experimental treatment of some phase of the subject, and written reports embodying the results and conclusions. Open to all students passing in Course 61 or its equivalent. MR. HAMILTON.

64. *Leading Works in Philosophy*. Two hours a week. This is a continuation of Course 63, and is subject to the same conditions. PROFESSOR SCOTT.

PHYSICS.

[UNIVERSITY HALL, ROOMS 10, 14, 23 AND 24.]

Professor Thomas, Assistant Professor Boyd, Mr. Kester, Mr. Brown.

The Department of Physics occupies the west half of the first two floors and basement of University Hall. The first floor rooms are the principal lecture room, fifty-five by thirty-eight feet; the elementary lecture room; an instrument room; and the office of the Department.

On the second floor are rooms for elementary laboratory work, and a dark room for photographic work, in connection with spectrum and Roentgen-ray apparatus. The lecture room on the first floor is also used in laboratory work. In the basement, provision is made for advanced exercises in electricity, heat, etc.

The Department has an excellent equipment of apparatus, to which additions are constantly being made. The apparatus includes pieces for illustration of the general lecture room work, but is principally chosen for accurate measurement in the laboratory. A set of standards of length, capacity and mass, sent under the act of Congress supplying such sets to the several agricultural colleges, is in the possession of the Department. The pieces are copies of the United States standards made by the Coast Survey at Washington.

Among the principal pieces of apparatus are a dividing machine by Fauth & Co.; chronometers by Parkinson & Frodsham, and by Negus, the latter a break-circuit; a chronograph by Fauth & Co.; a Hipp's

chronoscope; cathetometers by Salleron and by the Geneva Society, the latter an exceptionally fine instrument; Regnault's apparatus for vapor tension, for expansion of gases and for specific heat; Melloni-Tyndall apparatus for radiant heat; standard thermometers by Baudin and others; Rutherford and Rowland diffraction gratings; Rowland's spectrum photographs; spectroscopes by Brashear, Browning, Apps and others; Michelson's interferometer; Salleron's complete apparatus for projections in polarized light; lanterns for projections by the lime light and the arc light; a variety of sound apparatus from Koenig; portable and quadrant electrometers; Kelvin galvanometers of high and low resistance; Weideman, Kohirausch and other galvanometers; standard resistance coils, with Cavendish laboratory certificate; several sets of resistance coils and bridges; a Kew magnetometer; Kelvin standard balances; Weston ammeters and voltmeters; standards of self-induction; standard battery cells; photometric standards and photometers; X-ray apparatus, etc.

Under the laws of Ohio, the Professor of Physics is ex-officio State Sealer of Weights and Measures, and all of the standard weights, measures and balances received from the United States government are in the rooms of the Department.

FIRST SEMESTER.

51. *Mechanics, Heat, Etc* Three times a week. Second year, Science Course. Elective in the First year of the Courses of Arts and Philosophy.

53. *Mechanics, Sound and Heat.* One lecture, two laboratory periods a week. Elective in the First year of the Courses of Arts and Philosophy.

This Course is intended for students who wish to know something of the elements of Physical theory and manipulation, but do not care to follow the more exacting work of the preceding Course. The class meets for one lecture weekly, and in sections of ten to twelve for the laboratory periods. Each period occupies two consecutive hours, at the opening of which the instructor in charge discusses the theory of the experiment to be performed and gives the necessary directions for performing it. Each student then proceeds to make the measurements (a complete set of the necessary apparatus being provided for each member of the section). On completion of this work, the section is called to order, results compared, checked and discussed, curves drawn, and notes made. All experiments are quantitative, though simple, and serve well both as training in manipulation, and in affording an insight into the general methods of Physical measurement and discussion.

The work is found especially valuable by students who are fitting themselves to be high school science teachers.

55. *Laboratory*. Three to five times a week. The work begins with exercises in length, mass and time measurement, making use of scales, tapes and bars, micrometer screws, micrometer microscopes, the dividing engine, the cathetometer, the balance, chronometers, chronoscopes, etc. This course is intended to give the student facility in the use of instruments and knowledge of the theory of their construction and adjustment. The determination of various physical constants follows, with elementary exercises in heat, light, electricity and magnetism after which the student takes up such advanced work as his taste and skill permit. The experimental work is accompanied by instruction in methods and in the discussion of results. Each student works by himself, and is advanced as rapidly as possible. The equipment permits a free choice of work by the student, and is of such character that excellence of work and character of results depend only on his industry and skill.

57. *Laboratory*. Three to five times a week. Course 57 must be preceded by Course 55.

59. *Theoretical Physics*. Five times a week. Lectures and assigned readings. Graduate and advanced undergraduate course.

61. *Laboratory*. Five hours a week. To be preceded by Courses 55, 56, 57 and 58.

SECOND SEMESTER.

52. *Electricity, Magnetism, Etc.* Three times a week. Follows Course 51.

54. *Electricity, Magnetism, Etc.* One lecture, two laboratory periods a week. Follows Course 53.

56. *Laboratory*. Continuation of Course 55.

58. *Laboratory*. Continuation of Course 57.

62. *Theoretical Physics*. Five times a week. Follows Course 59.

64. *Laboratory*. Five hours a week. Continuation of Course 61.

PHYSIOLOGY

(See Human Anatomy and Physiology.)

POLITICAL SCIENCE

(See American History and Political Science.)

POLITICAL SCIENCE.

SEE AMERICAN HISTORY AND POLITICAL SCIENCE.

RHETORIC AND ENGLISH LANGUAGE.

[UNIVERSITY HALL, ROOMS 38, 40, 42, 44, 55.]

*Professor Denney, Assistant Professors Graves, McKnight, Allen,
Mr. Parker.*

Courses 51, 52, and either 53 or 54 are fundamental; Courses 55, 56, and 60, are advanced courses in composition; Courses 57, 58, 75 and 76 are advanced courses in public speaking; Courses 69, 70, 71, 72, 73 and 74 are philological; Courses 67 and 68 are pedagogical. Courses 59, 61, 62, 73 and 74 are usually found suitable for graduate students as well as for advanced undergraduates. Further courses of study exclusively for graduate students are arranged at the beginning of each year to meet individual needs and purposes.

FIRST SEMESTER.

51. *English Composition.* Three times a week. Credit two and one-half hours.

(a) Scott and Denney's "Paragraph Writing." Themes. Twice a week.

(b) Oral practice. Once a week with the instructor in public speaking.

53. *Studies in Exposition.* Four times a week.

(a) Rhetorical analysis of prose; with essay-writing. Three times a week.

(b) Oral composition. Once a week with the instructor in public speaking. Course 53 must be preceded by Course 52.

55. *Rapid Writing.* Once a week. The preparation of articles for the press, with exercises in observation, reporting, abstracting, condensation, expansion, interviewing, proof-reading, correspondence, and a study of newspaper forms. A special course for students preparing for journalism. Open to those who have passed Course 53 or 54.

57. *Brief Making and Argumentation.* Three times a week. Practice in making briefs of noted speeches and original briefs for debate; lectures on logical analysis, evidence and argumentation. Class debates once a week, criticised by the instructor in public speaking. Course 57 must be preceded by Course 53 or 54.

59. *Poetics*. Twice a week. Lectures, prescribed readings, and reports. Gummere's "Hand-book" and Aristotle's "Theory of Poetry" used for reference. Course 57 must be preceded by Course 53 or 54.

61. *Rhetorical Theory*. Two hours a week. Lectures on the principles of style, and theories of rhetoric as historically developed, accompanied by special investigations of rhetorical problems with reports and discussions. An introduction to methods of research and the use of material. Exclusively for advanced undergraduates and graduates, who are making their theses in one of the English Departments.

67. *Teachers' Course in Rhetoric*. Two hours a week. Lectures, conferences and prescribed readings on the teaching of composition and rhetoric in the schools. A special course for teachers and those intending to teach. Open only to advanced undergraduates, and to teachers who hold auditors' tickets.

69. *History of the English Language*. Twice a week. Emerson's "Brief History," with lectures and readings.

71. *Old English Prose*. Twice a week. Bright's "Anglo-Saxon Reader." Course 71 must be preceded by Courses 69 and 70.

73. *Old and Middle English Philology*. Two hours a week. Course 73 must be preceded by Courses 71 and 72.

75. *Extempore Speaking*. Two hours a week. Speaking from briefs and topical outlines on subjects previously mastered. Course 75 must be preceded by Courses 57 and 58.

SECOND SEMESTER.

52. *English Composition*. Three times a week. Credit two and one-half hours.

(a) Cairns' "The Forms of Discourse." Themes. Twice a week.

(b) Oral practice. Once a week with the instructor in public speaking. Course 52 must be preceded by Course 51.

54. *Studies in Exposition*. Four times a week. Repetition of Course 53. Course 54 must be preceded by Course 52.

56. *Rapid Writing*. Once a week. Continuation of Course 55, and must be preceded by Course 55.

58. *Brief-Making and Argumentation*. Three times a week. Continuation of Course 57 and must be preceded by Course 57.

60. *Short Stories*. Twice a week. Lectures, prescribed readings, reports, and practice under criticism. A study of the plan, purpose,

diction, and structure of selected narratives, with plot analysis. Course 60 must be preceded by Course 53 or 54.

62. *Problems in Criticism*. Two hours a week. Special research work, reports and a thesis. Course 62 must be preceded by Course 61.

68. *Teachers' Course in English Language and Grammar*. Two hours a week. A special course for those engaged in teaching and those intending to teach. Open only to advanced undergraduates, and to teachers who hold auditors' tickets.

70. *Development of English Prose*. Twice a week. A rapid survey of the history of English idiom, with lectures and readings. Course 70 must be preceded by Course 69.

72. *Old English Prose and Poetry*. Continuation of Course 71 and must be preceded by Course 71.

74. *Old and Middle English Philology*. Continuation of Course 73 and must be preceded by Course 73.

76. *Extempore Speaking*. Continuation of Course 75 and must be preceded by Course 75.

ROMANCE LANGUAGES AND LITERATURES.

[UNIVERSITY HALL, ROOMS 35 AND 34.]

The department of Romance Languages and Literatures offers courses of instruction and research in the three leading languages of the group whose origin is to be traced to the Latin or Roman idiom. These three languages are the French, Italian and Spanish. The foremost place in the work of the department is assigned to the French. In the study of this language the first desideratum is a thorough reading knowledge, which shall lead directly to the study of the literature. For all the languages taught in this department, it is assumed that the highest educational value lies in the acquiring of the ability to read them intelligently, to translate them correctly, to understand, appreciate and compare the various phases of their literatures, and to grasp the principles of their historic development. The practical side of the work, that which deals mainly with the acquiring of the ability to speak these languages with accuracy and ease, is regarded as supplementary, and as such receives due attention.

Exclusive of library facilities, the department possesses, as aids in illustrating and supplementing the work, the following collections: Complete set of maps (including Paris); illustrated volumes showing various phases of the arts and sciences, costumes and manners, public instruction, dramatic representations, etc., in France at different

epochs; large photographs and engravings of the principal French writers; collections of French prose extracts for use in sight reading.

I. FRENCH.

Professor Bowen, Assistant Professor Bruce.

FIRST SEMESTER.

51. *Elementary French.* Four hours a week. Grammar: Edgren's (Part I) or Whitney's (Part I) or Joynes' Minimum, with written exercises. Reader: Super's (from Part II) or Whitney's (Parts I and II) or Kuhns' French Reading for Beginners. In this course the study of the language is taken up from the beginning. Stress is laid at first upon the acquisition of a correct pronunciation, after which the entire energy of the student is directed toward the attainment of a full and accurate reading knowledge of the language. Grammar and composition are made to contribute to this end.

53. *Science Reading.* Two hours a week. A course introductory to the vocabulary of scientific literature, designed to familiarize the student with technical terms and style. Open to those who have completed Courses 51 and 52, or who have received credit for French as an entrance subject.

55. *Modern French Literature.* Four hours a week. Contes and Novels: Fontaine's *Historiettes Modernes*, Tome II. Balzac, Eugénie Grandet. Prose Composition: Edgren's French Grammar [Syntax] or Chardenal's French Exercises for Advanced Pupils. Lectures supplement the work; private reading required; systematic attention given to syntax and idiom. Open to those who have completed Courses 51 and 52, or who have received credit for French as an entrance subject.

57. *French Comedy.* Three hours a week. Study of the growth of French Comedy, with work centering upon Molière [four plays], Regnard [le Joueur] and Beaumarchais [le Barbier de Séville]. Lectures and collateral reading. Open to those who have completed Courses 55 and 56.

59. *Advanced Prose Composition.* One hour a week. Practice in speaking and writing French. Intended for advanced students who desire special training on the practical side of the language. Open to those who have completed Courses 55 and 56.

61. *French Tragedy.* Three hours a week. Racine and Voltaire. Lectures and readings, with assigned topics, reports and discussions. Part of the lectures given in French. Practical work continued. An advanced Course intended for students who have completed Courses

57, 58, 59 and 60. Any others must have the special consent of the head of the Department.

63. *French Literature Before the Seventeenth Century.* Three hours a week. Special study of la Chanson de Roland. General survey of the Old French period. Critical study of Montaigne [De l'institution des enfans]. Lectures (partly in French) on the literature of the sixteenth century. Assigned topics and reports. An advanced Course with the same conditions as in Course 61.

(Given biennially. Not offered in 1900-1901.)

SECOND SEMESTER.

52. *Modern Prose and Plays.* Continuation of Course 51. Four hours a week. Historical and narrative prose; one or more prose comedies. Sight reading is emphasized.

54. *Science Reading.* Continuation of Course 53. Two hours a week.

56. *Modern French Literature.* Continuation of Course 55. Four hours a week. Lyric Poetry: Bowen's Modern French Lyrics. Drama: Comparative study of the classical and the romantic drama: Corneille, Horace; Hugo, Hernani. Private reading: Hugo's la Chute.

58. *Recent French Prose* Three hours a week. Rapid reading with lectures. Critical study of some of the leading prose writers of the present, such as Bourget [Selections ed. Van Daell], Brunetière [Selections], Coppée [On rend l'argent], Daudet [le Nabab], Zola [la Débacle]. Open to those who have completed Courses 55 and 56.

60. *Advanced Prose Composition.* Continuation of Course 59. One hour a week.

62. *Chateaubriand and the Precursors of the Romantic Movement.* Three hours a week. Lectures and readings, with assigned topics, reports and discussions. Part of the work conducted in French. Practical drill continued. An advanced course intended for students who have completed Courses 57, 58, 59, 60, and 61 (or 63). Any others must have the special consent of the head of the Department.

64. *The Development of the French Novel.* Three hours a week. An advanced course with the same plan of work and the same conditions as in Course 62.

(Given biennially. Not offered in 1900-1901.)

Courses 62 and 64, are supplemented, toward the close of the year, by several lectures on: Methods of teaching French and the teacher's equipment.

II. ITALIAN.

Professor Bowen.

51. *Grammar and Readings.* Two hours a week. First Semester. Grandgent's or Edgren's Italian Grammar and Bowen's First Italian Readings. Open to those who have completed Courses 51 and 52 (or an equivalent) in French.

52. *Goldoni and Dante.* Continuation of Course 51. Two hours a week. Second Semester.

(Italian is given biennially. Above Courses not offered in 1899-1900.)

III. SPANISH.

Professor Bowen.

51. *Grammar and Readings.* Two hours a week. First Semester. Edgren's Spanish Grammar and Matzke's First Spanish Readings.

52. *Modern Prose and Drama.* Continuation of Course 51. Two hours a week. Second Semester. Alarcón el Capitán Veneno (Ford); Galdós, *Dona Perfecta*; Cortina, *el Indiano*. Brief talks on Spanish literature and philology.

(Spanish is given biennially. Above Courses not offered in 1900-1901.)

SANSKRIT

(See Germanic Languages.)

SOCIOLOGY

(See Economics and Sociology.)

ZOOLOGY AND ENTOMOLOGY.

[BIOLOGICAL HALL, ROOMS 3, 4, 7, 8, 9 AND THIRD FLOOR.]

Professor Osborn, Assistant Professor Hine, Mr. Landaere.

Instruction in this department is largely by the laboratory method with lectures and use of text or reference books the effort being to lead the student to observe and think for himself. The various courses are intended to provide instruction in the elements of the science, familiarity with methods of study and investigation, and opportunity for special research involving field, laboratory, museums and library work. The adjacent fields, wood, lake and river; the various well equipped laboratories, extensive collections and libraries furnish excellent opportunities for every phase of the study.

of the birds of North America, of Ohio fishes, of mollusks and especially rich collections of insects particularly in Odonata Hemiptera and Diptera.

The Lake Laboratory maintained at Sandusky and open during the summer vacation offers courses of instruction and exceptional opportunities for original investigation in a very interesting and delightful locality. (See Lake Laboratory.)

Courses 57, 58, 59, 60, 61, 62 must be preceded by 51 and 52, 53 and 54, 64 or Zool. 1, of College of Agriculture.

FIRST SEMESTER.

51. *Comparative Zoology*. Two lectures and one laboratory period a week. This course includes studies of types of different groups, discussion of principles and an outline of classification. Thomson's "Outlines" used as a basis.

53. *Comparative Anatomy of Vertebrates*. A laboratory course. Two laboratory periods and one quiz each week; devoted to Osteology, Myology, Splanchnology, Neurology and a full study of certain type forms. Wiedersheim's "Comparative Anatomy of Vertebrates" is followed as a basis.

55. *Comparative Anatomy of Vertebrates*. A laboratory course. Four laboratory periods and one quiz each week. Similar to 53, but more extended.

57. *Zoology and Anatomy*. Advanced laboratory. Three laboratory periods a week.

On entering this course one may choose his work from any of the following lines:

(a) *Anatomy of the Frog*. The guides used are Ecker's "Anatomy of the Frog," and Huxley and Martin's "Practical Biology." Both the gross anatomy and the histology will be studied, the student himself preparing the tissues, as directed; as time may permit, comparisons will be made with other Amphibia.

(b) *Comparative Anatomy of Invertebrates*. The manuals used are: Shipley's "Invertebrate Zoology," Lang's "Text-book of Comparative Anatomy," McMurrich's "Invertebrate Morphology" and Parker and Haswell's "Text-book of Zoology."

(c) *Invertebrate Embryology*. Text-book, Translation of Korschelt and Heider's "Embryology of Invertebrates."

(d) *Vertebrate Embryology*. The embryology of the chick or frog will be thoroughly studied as a basis; this will be followed by a study of the embryology of the fish, amphibian, and mammal. The course aims to give thorough drill in embryological and histological tech-

nique. The books used are Foster and Balfour's "Elements of Embryology," and the works of Hertwig, Minot, Balfour and Marshall.

(e) *Comparative Neurology*. This is a course in the anatomy and histology of the central nervous system, and will include a study of the brain and spinal cord of all classes of vertebrates. Edinger's "Lectures on the Central Nervous System" will be followed, and numerous treatises and special papers used as a reference.

(f) *Cellular Biology*. Text-books, Hertwig's "The Cell and the Tissues"; and Wilson's "The Cell in Development and Inheritance."

A student whose major lies in Zoology may take two full years' work selected from subjects named in the foregoing paragraph.

Zoological Seminar. The class will meet weekly to discuss methods and present reviews of current literature. Each student will be expected to present at least one major and one minor review each term.

59. *Zoology and Anatomy*. Advanced laboratory. Five times a week. Similar to 57, but more extended.

61. *Entomology*. An advanced Practical Course. Five periods a week. The courses are designed for those who wish to make a thorough study of some particular group of insects or to follow some definite line of the science, either morphological or systematic, or to fit themselves for professional entomological work. The work will be arranged with each student.

The collections, monographs, and apparatus at the command of the Department afford excellent opportunities for advanced work in Entomology.

Students are required to take part in the Zoological Seminar of the preceding paragraph.

65. *Ornithology*. Two laboratory periods a week. Advanced work on Morphology, Ecology and Classification of Birds.

SECOND SEMESTER.

52. Continuation of Course 51. Lectures twice a week. One laboratory period.

54. Continuation of Course 53. Three laboratory periods a week.

56. Continuation of Course 55. Five laboratory periods a week.

58. Continuation of Course 57. Three laboratory periods a week.

60. Continuation of Course 59. Five laboratory periods a week.

62. Continuation of Course 61. Five laboratory periods a week.

64. *Comparative Zoology*. Three lectures and one laboratory period a week.

66. Continuation of Course 65. Two periods a week.

The Department occupies the first and third floors of the fine new Biological Hall providing two lecture rooms, one general and five special laboratories, museums, offices for professor and assistants, besides room for storage, work-shops, aquaria, cold-storage, photography, etc. The laboratory equipment includes microscopes, microtomes, incubators, injectors, etc., for most approved methods of work in morphology, embryology and neurology. The collections include a fine series of skeletons, a number of large mammals, series of the birds of Ohio,

A student whose major lies in Zoology may take two full years' work selected from subjects named under 57. Parts of 57, b and c, and of 61, may be carried to special advantage at the Lake Laboratory.

STATISTICS.

The growth of this College is exhibited in the following tables, which show the number of degrees granted in each year since it was founded, and the present enrollment by years:

Year.	Bachelor's degrees.	Advanced degrees.
1878.....	6	
1879	6	1
1880.....	7	
1881	6	1
1882	7	
1883.....	6	
1884	9	
1885.....	9	
1886.....	9	
1887.....	14	
1888.....	16	
1889.....	16	2
1890.....	13	3
1891.....	20	3
1892.....	21	4
1893.....	25	
1894.....	24	3
1895.....	47	3
1896.....	43	3
1897.....	54	3
1898.....	55	6
1899.....	41	6

ENROLLMENT IN 1899-1900.

Graduate Students.....	26
Fourth-year Students.....	59
Third-year Students.....	71
Second-year Students.....	73
First-year Students.....	145
Special Students.....	73
Total	<hr/> 447

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